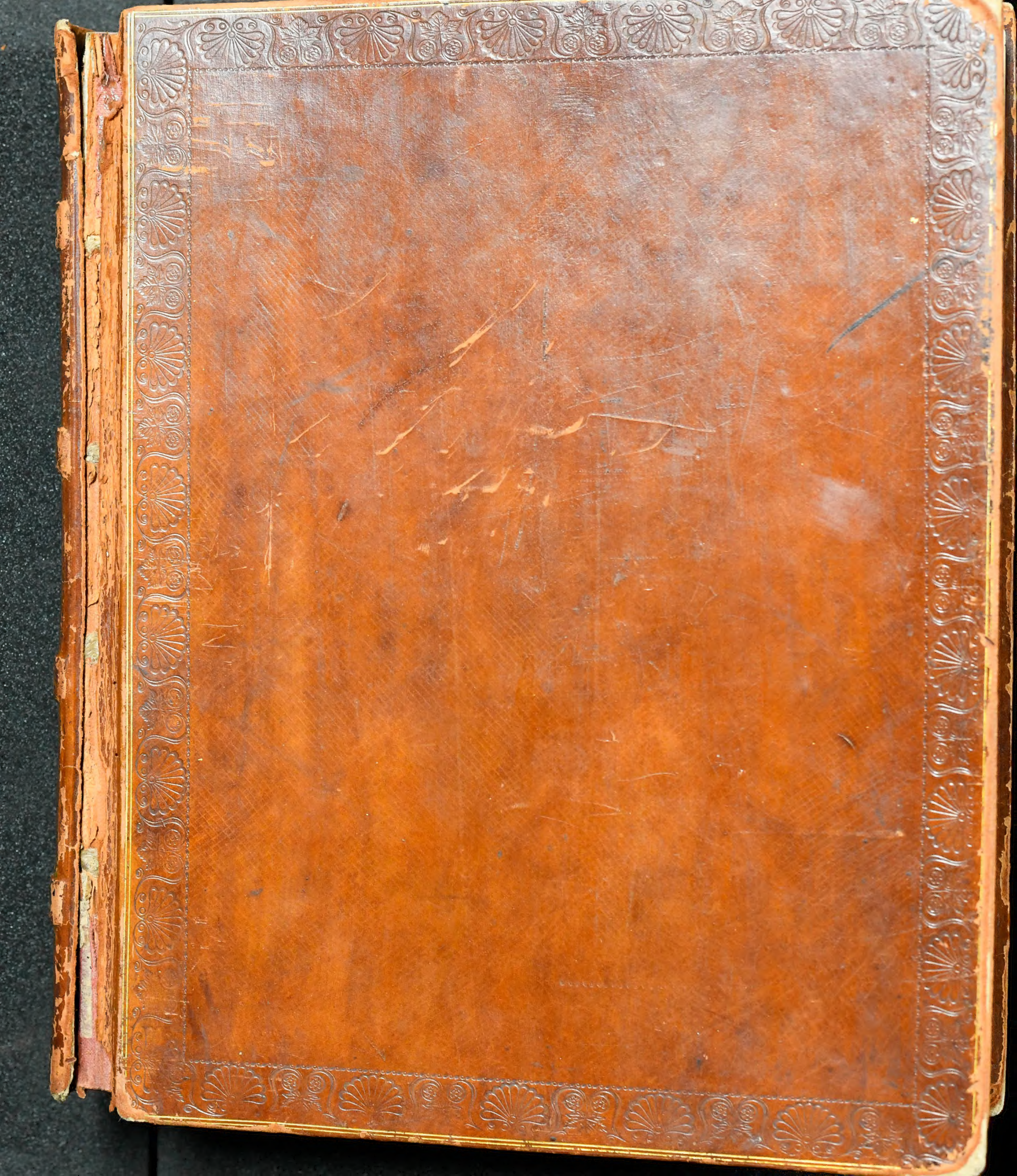

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Visit to Madeira.

by Charles Pickering

1838.

On learning that we were to touch at Madeira Isles by no means sorry to have an opportunity of seeing a little European Vegetation before proceeding further on the Voyage. The Island of course belongs to the Mediterranean Flora, though known to possess many peculiar species; yet the fact of its being considerably further south ( ) than any part of Europe gives an interest to Madeira and the Canaries, while the Flora of the opposing shore of Africa and the Chain of Atlas, remains so little known. However, the only forms we met with subsequently, which were not Mediterranean, were the Erethra, Phyllis, Myrsyneæ? some genera of ferns, and probably of Compositæ. — Yet Madeira presents some very striking features in its Vegetation, as will be noticed hereafter. — A year's residence would be required to do justice to this Island, and it is to be hoped that some European Naturalist will take advantage of this field, in the same way as Messrs. Webb & Berthelott are now making known the Canaries. — We can only record the observations of a week.

Madeira at first sight appeared loftier than St. Michaels, and the land more uniformly high. On nearing it (Sept. 16th), the glowing descriptions of Travellers did not seem likely to be realized. — Instead of being "covered with a dense coating of dark green", by far the greater portion of the land had the appearance of naked rock, with only a spot of green at intervals. — This was found subsequently to be owing chiefly to the withered grass, for we were a little too late for the most favourable season for the Botanist. —

Sept. 17th. At about 1 p.m. took horses at Funchal for Santa Anna, at the North Eastern part of the Island; the distance, 6 hours ride, or perhaps 18 miles. — After riding some time through the town and adjoining Vineyards, continually ascending, we reached a barren region, which had been stript of its timber and is now covered with grasses (then withered) intermixed with scattered tufts of Broom (Spartium) and Heaths, the latter growing 4 to 6 feet high. — After reaching the height of perhaps 1500 feet, we found a Whortle berry (Vaccinium padifolium) abundant, 5 to 7 feet high, and bearing exceedingly the habit of the N. American species; which was almost the only thing we found on the Island that reminded us of America. —

A.

– A little further on a Shrubby Laurel (L. fœtens?) mixing with the Cocoanut, the Spartium and Heaths, formed quite a dense undergrowth of Shrubs, for we had seen no trees. Our ride had been uninteresting as to plants we had met with, for the most part had evidently been introduced or at least were doubtful natives – Arums only not in the bottom of the first ravine that we saw some relics of the Primæval Forest and began to get materials for restoring the Original Flora of the Island. – Here we met with a few scattered stocks of Laurus, some 3 feet in diameter and at least 50 feet in height. – Our route was constantly increasing in interest – The view was better and more magnificent than any Island for country. Interesting plants were met with at every step; and the bold and stately projecting from the high Natural precipices, promised a long respite from the changing hand of man. – The declivities were to be sure, such as one expected to have gone over on horseback, but the road was good, considering the nature of the ground. – After passing a considerable stream (perhaps half way) we came along by an inaccessible ledge of rock, several hundred feet high, against which we found the Woodwardia and a great number of interesting plants than in any other locality we visited on the Island; but we were so hurried by our guides that we could not gather half we saw; and it was long after dark when we reached our destination at Santa Anna. – Our party consisted of Messrs Drayton, Courthouy, Breckenridge and myself, with each a guide; and we were soon joined by three officers from the vessels, Messrs May, Gilchrist and Dale, bringing with them Barometer Bottles &c.

Sept. 18th. – At Santa Anna (ascertained by our Naval Gentlemen to be about 1000 feet above the sea) we were surprised to find the Banana plant still growing in the open air. – Peaches were abundant, but did not seem to ripen well. – Grapes were also in cultivation, but we did not find them much higher up. – The Amaryllis belladonna seemed completely naturalized and was growing in great profusion in every direction. – The cultivated spots, since leaving Funchal were for the most part gardens, well kept; and often required a practised eye to distinguish them:

We

– We observed the Chestnut very commonly planted in the vineyards and frequently we found it abundant in all other parts.

At about 8 o'clock left for the Pico Ruivo, the summit being distant 3 hours ride. After proceeding some distance we entered a region above every part was cultivated except the Vines, which continued to the highest cultivated spot (ascertained by the Gentlemen of the Survey to be 4100 feet). This district extends downwards at least 1000 feet, but the precise point of commencement was not noted. – At this point (the highest cultivated spot) we rejoined the Naval Gentlemen, and continued in Company, for the most part to the summit. Before reaching it however we experienced a rare treat for a Botanist – we entered a dense forest of the Arborescent Heath – It was a novelty indeed to see a Heath (Erica with a trunk a foot to eighteen inches in diameter*, and through gnarled and knotted, and the tops flattened by exposure and the great elevation of the soil, still rising to the height of 20 to 30 feet – the resemblance of these who have taken them for Cedars or Junipers seemed very excusable. – The weather was extremely unfavourable the whole time we were upon the mountain – We were constantly enveloped in Clouds and had frequent rain so that we were unable to obtain an extended view, which was represented by the guides as exceedingly fine.

At the very summit we found scarce anything except the Erica Arborea, now dwarfed to a shrub, and a low-spread which seemed peculiar, as we found it no where else – A grass in dense tufts, rarely only 6 inches to a foot above the soil. – By a diligent search however especially against the faces of the abrupt precipices, we found about 20 species within perhaps 100 feet perpendicular of the summit. – The elevation however was not sufficient for any strictly Alpine plants, and the only approach was 2 or 3 specimens of a Saxifrage, found by Mr Brackenridge ridge. Judging from the Vegetation I should estimate that the height

* One trunk, measured by Mr Brackenridge, was 4 feet 9 inches in Circumference

Madeira.

Corresponded to at least 3500 feet on the White Mountains of New Hampshire in Lat: 44° (The absolute height was determined by our party to be 62 feet.) the following is a list of plants found within two feet of the summit exclusive of Mosses and Lichens –

Vaccinium Oxycoccos } Creeping to the east.
Galium
Senecio — Recumbent over down and common on the east
Spartium — appears to be the common one of the Island
A large rough leaved cultivate plant.
Saxifraga
Bartsia
A yellow violet (perhaps an alpine form) Allied to the [illegible] species.
Erica Arborea
— n. sp.?
Hypnoreum
Aspidium — like Acrostichoides but not common there
Sedum
Thymus — with brown leaves
Compositæ — like Hieracium
Adenostyles
Fontinalis?

The rocks at the summit were more scorified than any we had yet seen; [illegible] but we where [illegible] did we meet with distinct Pumice or Obsidian. After remaining 2 or 3 hours at the summit we commenced the descent, and were more occupied to note the gramineous plants. - After passing the part of the Volcanic Mouth above mentioned, a few hundred feet below the summit (and where we found a considerable mixture of the Spartium) we entered a district covered for the most part with short withered grass (with flowers intermixed with frequent bushes of a Fern (as being this, having the habit of P. aquilina & Canadensis, with which it has also Coffee-like), which extended to the commencement of cultivation. The whole of this district may very probably have been once covered by the arborescent Heath, and the remnant near the summit have only escaped destruction from its distance from any habitation. The Fern (Pteris) is gathered in large quantities by the natives, who bring down large bundles of it on their heads. — The lower part of the mountain is now covered with a thick undergrowth, consisting chiefly of the Vaccinium, Rubus (like fruticosus), Spartium & Cytisus Heaths, among which we found more rarely an occasional tree of the Juniper [illegible], and a few young plants of the Clethra arborea and Laurus; the forest being entirely cut off. — Returned through the vines to Santa Anna, where we passed the night.

Sept. 19th. Next morning took horses for Sam Vincente, distance 6 leagues, on the North side of the Island. An American, brought up in the United States where we have no volcanoes, can form but a very poor idea of the appearance of these Oceanic Islands. M. Breckenridge had long given in the usage of his own sentiment, and M. Bentley felt disposed to yield the palm of classic taste — What ascended Granitic mountains of New Hampshire, had climbed the steepest part of the White Mountains, an easily accessible but for the projecting shelves, where two I sometimes dared not look behind — For Madeira, to be sure the rocks is treacherous and the shrubs have not a firm hold, but very many places must long remain undisturbed, even by a Madeiran. The Scenery of the White Mountains now appears to me quite tame, and the Alleghanies, the mere undulation of a Plain. In short, in the United States we have to search a Continent for a mural precipice of 1000 feet, while at Madeira we meet them at every turn, higher, sometimes absolutely perpendicular, or

even

a river overhanging. — To the lover of the Picturesque we would strongly recommend our route through the island, a part of which seems very little frequented — or if time presses, let him take horses at Funchal, pass through the Corral and about a couple of miles down the ravine beyond — or at all events never to visit the Corral without going to the bottom of the ravine. — We subsequently procured at Funchal a Series of 26 Views on the Island, engraved in England at great expense, but there was not one among them taken from any point that would not have been visited by our party.

Our route to day led us for the most part in the vicinity of the Sea, whilst the road was continually exposed to the face of the precipitous cliffs and we looked down into the sea many hundred feet below us. Two species of Semperviveum were also seen projecting from the base with Lava or a most picturesque feature for an American — indeed from such situations we gathered a variety of interesting plants. — As we approached the base of the cliffs, a species of Lichen began to prevail, finally becoming exceedingly abundant, which we presumed to be the Cudbear of Commerce, for our specimens were unfortunately lost subsequently. No use seems to be made of it by the inhabitants, if indeed they are aware of its existence. We passed by Porto Delgardo, a Considerable village on the Coast. We repeatedly saw Orange Trees upwards of 40 feet in height with a trunk of two feet in diameter. — Finally we reached the long wished for shore of the sea, and dismounted for a closer examination. — Jones astonished to find, although the circumstances seemed the most favourable possible, an almost total absence of Fuci — One or two small tufts which had been washed by the sea in to crevices were all we met with in this place. This observation was confirmed by our subsequent experience — in all our visits to the sea shore we found the Fuci exceedingly scarce, and even the Ulvae & Conferveideae by no means most abundant.

Our guides did not permit us to remain here long, for there was a pass ahead, impracticable at high Water — we were forced to proceed. Ever since leaving Funchal I had frequently observed the rock presenting the appearance of Pudding stone, but the surface was so decomposed and weathered that I was unable to ascertain whether it was a real

Breccia or mostly nodular Lava; but here the character of the rock became unequivocal — it was a true Volcanic Breccia, and in one locality we found it composed even of boulders, tons in weight. We soon got by the difficult pass, where we were told persons have been sometimes drowned, and arrived safe at San Vincente.

Here our search for Marine productions was eminently successful. — We found among others a Hydrophyte, resembling entirely one of the Digitate Sponges except in its green colour; which perhaps may turn out allied to the singular fossil bodies of the Alleghanies, which have been termed Fucoides.

From San Vincente the Wine is sent round in Pipes in large boats to Funchal. — It is a secluded place, and we were told that only three Strangers (English men) had passed through in four months. We were hospitably entertained by a Padre, to whom we brought letters; but to hear the road to Funchal pronounced bad by a Madeiran, was not calculated to excite pleasant anticipations.

Septr 20th — In the morning started for Funchal, distant 9 hours by the way of the Coast. — On gaining the first height, above the cultivated portion of the Valley, we observed at one time an extensive district covered almost exclusively with Broom (Spartium), here growing 10 or 12 feet in height with the stems 2 to 4 inches in diameter; at another, the Arborescent Heath, occupying an equally extensive tract, but of lower growth than near the summit of Pico Ruivo. — On crossing the ridge we entered a ravine facing the South-West, and as we were told, the wildest part of the Island — But it was to us the most interesting. The declivity was steep, but the soil seemed rich and deep. — It was here only that we fully realized the Original condition of the Island before being stript of its magnificent forests. — We here found Laurels of at least two different species, having trunks 3 and 4 feet in diameter, and attaining the height of at least 60 feet — some indeed were ten and twelve feet in diameter, measured just above the roots, but these seemed rather clusters of trees than a single stock. — In all the Northern parts of the Globe, at least on the Continents, it is well known that the Amentaceæ and Coniferæ compose by far the principal portion of the Forests — having

out the further Walk, where the Birches, the Willows and the Poplars alternate with the Spruces, we have in milder latitudes Forests of Oak, Beech and Chestnut alternating with Forests of Pine; but in Madeira we did not find a single indigenous Pine, nor indeed one of the Coniferæ (the Books to the contrary notwithstanding), and the only Amentaceæ were a Willow, very rare if native, and an Arborescent Species of Myrica. In this Volcanic isle, Forests of Laurel alternate with Forests of Heath.

Ascended a second ridge and entered the Corral, which is only a narrow ravine, but deeper than usual — The margin at the head was evidently very ragged in its outline but neither here nor in any other part of our route did we see any traces of a distinct crater. — Came through the Corral, by no means the least interesting part of our journey and arrived at Funchal before dark.

Sept. 21st Took an excursion along the coast, about three miles westward that precipitately with a view of obtaining marine specimens, but the Cephalopoda proving unpurveyable did not meet with any striking success — Some Coast Plants of interest were procured.

Sept. 22d — Understanding that the Vessels were not to sail till the succeeding day, took horses for the outlet of the Corral, about 6 miles distant. After spending some time among the Crags of the Sea Shore, proceeded on foot perhaps three miles up the dry bed of the Torrent. — We had here frequent occasion to admire the industry of the inhabitants, not only in forming the bed of the Torrent into many small enclosures for the culture of the Caladium esculentum, but in diverting the water, carrying it along the most difficult ledges, for the purpose of irrigation. Returned over the Sierra to "Camara de Lobos" (Seal Cove) a village beyond the outlet of the Corral) where we were fortunate enough to procure lodgings in an empty house — Before dark however we made a second excursion to the Sea Coast, eastward, and were fortunate enough to find a more favourable locality than we had previously met with on this side of the Island, but the day was so far advanced that we were soon obliged to return.

Sept. 23d Returned in the morning to Funchal, and after procuring some Actiniæ &c. from the rocks at the Eastern extremity of the town [illegible] aboard the Vincennes.

Madeira.

The inhabitants of Madeira, of course, belong to the Old Arabian Stock, like Ourselves. I saw no mixed blood among them, and but three Negroes in the whole place. From the idea I had formed of the Spanish and Portuguese I expected to have seen everybody with a dark Complexion, black hair and eyes, but I found a great diversity in form and feature, and even in the Colour of the hair, as among ourselves. They appear to be, at least in the interior, an industrious, civil, sober people; and we could not help pitying their degraded condition.

General remarks on the Botany of Madeira.

It is somewhat remarkable that as we inhabit where so many tropical plants are so successfully cultivated (as the Banana, Coffee, Guava &c.) there should not be found a single indigenous Tropical form; while Bermuda, situated in nearly the same parallel abounds in them. The only approach we observed, was a manifest tendency in all perennials to acquire Woody stems. This was particularly noticed in the Borragineæ, Labiatæ, Cruciferæ, and Compositæ, especially in the tribe Cichoreæ.

Our data were by no means insufficient, for though we spent only a week on the island during which we travelled about 100 miles, chiefly on horseback, passing over the ground most likely to prove by any means objects of interest; we managed to collect 120 Species of Plants, avoiding of course all that did not seem to be truly indigenous. For this we were chiefly indebted to our companion Mr. Braithwaite; without whose keen eye, varied knowledge of the cultivated plants; modes of culture in Britain, Germany & America, his energy and endurance, our collection would have been but slender. Mr. Crouthony also, though engaged in other pursuits, rendered us very efficient assistance; he soon learned to discriminate the objects of interest and regardless of danger, gleaned them from situations which in all probability had not hitherto been visited by the Botanist.

As remarked above, the only forms we met with which are not strictly Mediterranean, are Phyllis, Clethra, and perhaps one of the Myrsineæ. The presence of the Laurel seems the most striking Botanical feature, although it is much the same as in the South of Europe, except that the forms are more abundant; as was to be expected in all Ocean islands. The prevailing forms seem the Labiatæ, Compositæ (especially of the tribe Cichoreæ), Crassulaceæ, Cruciferæ

Madeira.

Leguminosæ of the tribe Loteæ (but no Astragalus) and the Heaths.— It is also
it by no means deficient in Borragineæ, Umbelliferæ, Hypericineæ, and Plant-
-agineæ, , but we found no Cistineæ or indeed Ranunculaceæ.
A single root and leaf of an Orchideous plant was found by Mr Buchanan at Santa
Anna. As to Species many are well known to be peculiar to Madeira, and in all
probability more remain to be ascertained.

The forest of Madeira, as above mentioned, is composed almost entirely of
three species of Laurus, alternating with the Arborescent Heath. To these must be
added as of rare occurrence, an Ilex, Clethra arborea, an Arborescent Myrica (
or 10 inches in diameter and 25 feet in height. — We were however unable fully
to satisfy ourselves as to what trees had once overspread the Vine district on the
South Side, say from the Sea to the elevation of 1000 feet. During the short time we
remained in it we could perceive no Indigenous trees or shrubs except
the soil seemed better and deeper than elsewhere.

The undergrowth at Madeira seems chiefly composed of the Species of Erica
Heaths (which plants are probably now prevailing to the removal of the
Forests), a Rubus (like fruticosus), the hairy Pteris (like Aquilina) and the Vac-
cinium padifolium (between 1000 & 4000 feet). — Globularia longifolia was not uncom-
-mon (in the lower districts), as also two Shrubby Hypericums — and the Sanicula
Europæa? more usually does not exceed the dimensions of a Mouse.

Grasses. We found a great variety of grasses on the Island, but except
the lateness of the season, all were withered. They appeared to be the same as those
of the South of Europe, and probably may prove for the most part identical, if indeed
the greater portion have not been introduced. — One Carex seemed indigenous.

Maritime Vegetation. In all our visits to the Sea Coast we found no
where a Sandy beach or Salt Marshes; nevertheless maritime plants were by no means
scarce, often however not in the situations we have been used to look for them in America
but projecting from perpendicular Cliffs in the Vicinity of the Sea. — We met with no
Salsola or Salicornia, but can enumerate the following. — (From the view we have
seen of Porto Santo, it is probable that the circumstances are considerably altered in that locality

Leccanora
Asplenium marinum — North Side of the Island
Plantago

2 Species (one Shrubby, like Bupleurum)

Cynodon

Madeira.

Cynodon dactylon
Crithmum
Tesuvium?
a Shrubby Gnaphalium, with very white, lemon leaves.
a Compositæ like Hieracium.
2 Species of a Solanum Leguminosæ.
a small Shrub with fleshy leaves, perhaps Crassulaceæ

Aquatic Vegetation. It was an unexpected circumstance to us, in such an Island as Madeira, where the many Streams are mountain torrents, & there are no lakes, & naturally no marshes, to find a considerable variety of Aquatics as the Lemna, Alisma, Callitriche, Potamogeton, to say nothing of Cyperaceæ, &c: — We are now inclined to suspect that some of these may have been introduced in the cultivation of the Caladium esculentum and formation of artificious marshes for that purpose. A Commelina found among the roots of this Vegetable seems rather to confirm this view — At all events we obtain specimens for future examination. — In the Northern & Middle United States we have no aquatic cultivation, not even of marshy grounds — perhaps it is to this circumstance that we are to attribute the rare introduction among us (almost but

of plants affecting such situations.

We might also here remark by a notice of some plants which have been attributed to Madeira; evidently through error; but this being a matter of some delicacy, should demand a more thorough examination than we were able to bestow.

Mammalia

A bat was seen by Mr. Buckmaridge, and I find that Bowdich notices it as a remarkable species. We have only to recommend it to the attention of some future visitor — and are inclined to believe that it comprises the whole of the mammalogy of this Island.

Rabbits we did not see, but were informed that they were the same with the European, and Bowdich gives a particular notice of their introduction.

Birds.

In all Islands of this description Land-birds are well known to be rare. We had no guns; yet the Ornithology of Madeira is by no means devoid of interest. We inquired to ascertain whether they were more frequent in Winter; as it is of some interest to know whether any from the neighbouring Continent Winter in this place. We saw at least 2 species of Hawk, a Linnaria (perhaps the European Linnet), and what we took to be an Anthus. The Goldfinches sold at Funchal were said to be taken on the island; but we were not fortunate enough to meet with the Canary finch. A yellow Wagtail (Budytes) would sometimes settle near us, on the stones in the Mountain Torrents, an interesting sight for an American. It was here that I for the first time saw the Swift, which is aptly named as its flight is much more rapid than that of the Swallow, smoothly flowing and different enough from that of our Chimney-Swallow, which has been referred to the same genus. It was however in the Valley of San Vincente that we heard the greatest variety of notes, and among others one very shrill which we felt inclined to refer to a Woodpecker.

Reptiles.

A lone Lizard (Lacerta) is very abundant in all parts of the island. — From the restriction of several European species we are inclined to suspect it distinct; if so, it is probably the only native Reptile on the Land.

Frogs

Madeira.

Frogs were found abundant on the South side of the island but we subsequently understood that they were introduced by an English Gentleman about ten years since. — They agree very well with the description of R. Iberica, and from the testimony of Mr. Brackenridge we are inclined to believe them the same with the English Frog.

Fishes.

After a diligent search in the interior waters, when we had an opportunity, we could not find a trace of a single Fresh water Fish. As to the marine species, Madeira is a fine Station for an Ichthyologist, and we would recommend "Camera de Lobos" for a residence in preference to Funchal. There, a wall of rock forms a little harbour for boats, where at least they are not obliged to be drawn on the Beach at every trip, and accordingly it seemed to be a favorite resort for the Fishermen. We were not prepared for procuring Specimens of any sort, and indeed felt less interest in it as we expected to meet with only the Mediterranean species. We specify the following simply for memory that our materials cannot only in a very imperfect manner, compare. — The Bonito (Thynnus pelamys) was exceedingly abundant. Two of these we had previously taken near the East of Mexico — Also a large Thynnus, called in Nice, called by our Companions Albicore. — A few Scombers like the European Mackerel; — a small fish of the Scomberoides was exceedingly abundant. — A fine Blenny was very abundant about the rocks, in the pools left by the tide. — a Lepidopus? — a Physis, which Sara is figured by Bonelli — a Brown Scarus! — and a brilliantly coloured Julis. — The Serranus Cabrilla — Serranus gigas? — Pagrus vulgaris &c.

Crustacea.

Under Stones in the Interior we found a Porcellio Armadillo. The only Crustacea of the littoral or water mark were abundantly inhabited by two species of Gammarus (one of large size), coursing about the Crevices and over and under the Seaweed with such activity that it was no easy matter to capture them. We

noticed that (at least the large one) resorted frequently to the cliffs near, but above the tide to cast its ova. A Ligia was very abundant in the same situations as also a small Paguras. — We obtained also a Bithynus, a fine rare animal which makes its home in the crevices of the rock — a Xantho, two fine species of Plagusia, and a fine Palaemon. — Our specimens of these Animals were mostly handed over to Mr Lima for examination. —

Insects &c:

We were surprised to find such a variety of insects in Madeira, and were there not so vast a field in every Country, would recommend it to the attention of the Entomologist. Our collections however were not very abundant; being convey- -ed Anchored in a bottle of alcohol.

We took a Phalangium at the summit of the Pico Ruivo, and several fine Araneidae on the mountain. — A Julus was also found at the summit of the mountain, and another finer species near the outlet of the Conval. A Lithobius, also on the mountain. Near the outlet of the Conval we found two specimens of a Scutigera, apparently in a wild situation. —

A small variegated Blatta was very abundant at the summit of the mountain, and a Forficula on all parts of the same. Several fine Gryllidae and Locustidae were collected. A minute Ephemeridae; 3 or 4 Libellulidae, one of them rather a showy species.

Among Hymenoptera, 2 or 3 Formicidae, an Ophion, a Vespa, a Bombus and some other Apidae; &c &c.

Among Lepidoptera we observed the Phalanidae in considerable variety and 5 or 6 Papilionidae, Specimens of which we believe were obtained by Mr Peale near Funchal.

Among Coleoptera we observed, to our surprise an Elmis at the bottom of Stones in the Mountain Torrents. — Also a Dytiscidae — 6 or 8 Carabidae — Staphylinus, a Blapsidae, 2 or 3 Curculionidae, 2 Coccinellus, &c &c.

Among Diptera, we did not observe any thing very remarkable, as we did not look for them very particularly.

Mollusca &c:

We found but two Species of Mollusca in the fresh waters of Madeira,

one

an Ancylus very abundant, and a Lymnaea, only in one locality. Both may probably prove peculiar species. With respect to the land species, Mr. Courtenay was on the whole disappointed, yet we met with some success. We obtained a few Helices, though no very striking species, some Limaces and 2 Species of Vitrina. The rocks below High Water mark were abundantly inhabited by a Monodonta, Littorina a small Balanus 2 or 3 Patellas, occasionally a Purpura and more rarely a Chiton. Patella are abundantly brought to the market at Funchal, as also a large Balanus. In a pool left by the tide, near "Camera de Lobos," I for the first time saw a living Octopus - it was of large size and was stretching over the rocks with the activity almost of a Grapsus - it escaped from me by means of a crevice. Though we probably did not find out the most favourable localities, yet a number of other Mollusca were obtained, for a particular account of which I must refer to the notes of Mr. Courtenay.

A Hirudo was found under the wet turf near the outlet of the Corrual; an Annelid from the rocks washed by the tide — and in about the roots of the bordlines were observed various minute species of vertebrata. Two Species of Oniscus we obtained one of them perhaps forming a new Genus, the other was subsequently lost — to. would recommend it to the attention of future visitors — Both are found under the old Castle at the Eastern extremity of Funchal. —

Mayo, and Ilheu de St. Jago, presented at a distance a different aspect from Madeira or St. Michaels, which was rather unexpected as they were known to possess the same Geological Character. These were mountainous in the centre, and apparently of considerable height, but the greater portion of the surface appeared comparatively of moderate elevation; gently swelling, and sloping very gradually to the coast, where it terminated in cliffs from one to two hundred feet in height, and at intervals in sandy beaches. — On a nearer approach the surface appeared almost uniformly of a light green colour, and, except on the coast, the bare rock was rarely visible.

Octr 6th An opportunity was afforded us to land at Porto Praya. Near the base of the cliff a pale coloured stratum was conspicuously visible, perfectly horizontal and extending several miles eastward of the Town. It was found to be of a friable consistence containing fossils, as Ostrea, spines of Echini, casts of Tussitella?, fragments of a large bivalve, perhaps Cytherea? &c &c. and was evidently a Tertiary formation. — It was covered above by a thick bed of cellular lava, to the summit of the cliff — evident, this accounts the prevailing character of the rocks everywhere a much more scorified than at Madeira, and apparently having been subjected to a more intense heat. — Does it to this circumstance that we are to attribute the less rugged character of these islands? —

We landed at 10 a.m., and expecting to remain till 3 P.M., after spending a short time near the landing place, we turned our steps eastward to a ravine we had noticed, perhaps 2 miles distant, near the entrance of the Bay. — Thence returned to town, and learning that we might remain on shore till sun-down took a second excursion to the summit of a flat-topped eminence, perhaps 6 or 700 feet above the sea, to the north-west of the Town. Here we were overtaken by a heavy shower, which continued at intervals for the remainder of the day. Our days' walk may have extended to about twelve miles.

We found the soil everywhere strewed with fragments of Lava, and covered with Lichens, rising with great uniformity to the height of about a foot, and composed chiefly of grasses and annual plants. — The Grasses may have occupied about one fourth of the surface, and the prevailing ones were a Dactyloctenium, Chloris, Panicum, Setaria, Panicum, and an Aristida with the three awns excessively prolonged, the latter sometimes covering almost exclusively tracts of an acre in extent. Mixed with the Grasses the prevailing plants were a Bidens and an allied genus

Cape Verd Islands.

Genus (having somewhat the habit of Euphorbium), one Achyranthes, and three Hydrocharideæ; also two Convolvulaceæ, a Cochorus, Indigofera, a Yellow Cleome(
), Heliotropium Strigosum?, a Lanose Amaranthaceæ, and several Shrubby perennials with a woody base, as a Salvia? a globular Annulated Spermaceæ (verticillata?), 2 Sedums and some other white and yellow small flowered Malvaceæ &c. — Prostrate vines were also abundant, especially in the more precipitous situations — the large purple flowers of a fine Convolvulus were conspicuous everywhere three other species were observed, also three small flowered Cucurbitaceæ, and two Boerhavias. — Among this low growth of herbage might be seen occasionally, but rarely, a Banana, three to five feet in height, Cleopatra, Aloes, almost imperceptible, and nearly destitute of foliage; Zizyphus, having much the same habit, was the only other native shrub we met with (unless indeed the Annona, near the top of the hill, should prove indigenous). — We saw no native Tree, and what is more remarkable in an Ocean Island, not a single moss! — no lichens, and even the Lichens exceeding scarce — a single species occurring twice, closely adherent to the rock. — A more striking contrast to Madeira cannot well be imagined. —

The Vegetation was entirely Tropical, notwithstanding what has been asserted to the Contrary, a remarkable Anticharinum formosum the only decided exception. It is to be observed that we had no opportunity of visiting the interior of the island, or the Mountains, where it is possible we might have found some bulbs and trees — near the Northern Coast where the Roccella is said to be sufficiently abundant for the purpose of Commerce.

These islands present exceedingly interesting ground to the Botanist and a much wider field for discovery than Madeira; though so frequently visited, its productions still remain entirely unknown. We collected 120 different plants, among them some remarkable species, as are Orobanchoideæ, entirely green with the exception of the flowers, parasitic on the roots of a Physalis. The character of the Vegetation (as well as Animal productions) is decidedly African; which Continent is at no great distance, yet it is very possible there may be some change in climate (?) — According to Brune the rains on this Continent extend North-wards only to Lat. 16°, a remark which was strikingly confirmed by the journey of

of Denham and Clapperton, but whether it holds good on the Western Coast there no present means of ascertaining — nor whether the line varies in different seasons, producing an intermediate district between the Desert and the Forest. — The Cape Verd islands are situated within the limit of Bruce, and are subject to long continued droughts — it is said they have not yet recovered from the effects of one which happened about six years ago. — I observe that the Embassy to Ethiopia (Alexander's) visited the islands in 1792, in the midst of such a period — "when little or no rain had fallen for three years"; and it is recorded as well worthy of note "that notwithstanding" the Jatropha curcas, Annona & Adansonia gigantea were still flourishing".

We met with no running water (except indeed during the shower) and of course no Aquatic (Fluviatile) vegetation was to be expected. —

Maritime Vegetation. We had no time to determine with accuracy the plants properly belonging to the vicinity of the sea. — The Mesembryanthemum found on the Coast a low, shrubby densely branching & spiny Prenanthes? — Mangrove Alva was very abundant near the landing, but whether native we could not ascertain. —

We saw no signs of cultivation on the upland — only in the wide bottoms of ravines on each side of the town. Even the Jatropha curcas seemed to prefer such situations, though found with the Annona near the summit of the hill. The plants we saw in cultivation were, the Date & Cocoa Nut, Carica papaya, the Tamarind, one of the Gutliferae, and Indian Corn — Yams, Oranges and Bananas were in the market, the two latter brought it was said from the Interior. — We saw nothing of the famous Adansonia mentioned by Alexander — and indeed it is probable that the population has materially diminished since the date of his visit. — The relative proportion of black to white has not been.

Perhaps it is not unworthy of record that while at Madeira the Grapes were all withered, here all were in their prime. — Goats were in great numbers everywhere; and we saw also Asses and Horned Cattle.

In the Salt water, Fuci Ulvae and Conferviodeae, appeared more abundant than at Madeira.

Zoology.

We saw no Mammiferous animal on this island, at least not that it is not probable there may exist some, one of which was seen at about six miles distance from the land

Birds on the other hand appeared quite numerous, and their cries only were heard in every direction. — We had no time to pay attention to them — but Mr. Peale was understood met with considerable success.

Cape Verd Islands.

Reptiles. We found 2 Geckos (Platydactylus & Homidactylus) and a Scincus pretty common — all may probably form peculiar species.

Fishes. were in great variety, but we had little time for observation — a Polynemus pretty abundant Pagellus, Smaris, Cara Tomus, Scomberoides &c Carcharias Muraena &c &c. We did not meet with any Chatodons or Balistidae.

Crustacea. — An Ammotille under Stones — and in the Salt water a fine Palinurus, a Scyllarus, Grapsus, Pagurus; and other Marine Crustacea in great variety. —

Insects. — A Centipede (Scolopendra) was extremely common under Stones — *Ammicidae* were in considerable variety, and we met with some fine ones of them — a Lepismida was also taken — some fine Lepidoptera were seen, chiefly Tropical African forms — a Cincindela extremely Common — and other finely different Families of great variety and beauty. — a large Asilus was seen. —

Mollusca &c: — We saw no trace of land or fluviatile Mollusca. — Of the Marine species the Coasting found a considerable variety, and also threw on shore Actinia, an Echinus, Asterias &c. &c: — Extensive beds of Sabella were frequent.

Rio Janeiro.

We arrived at Rio on the afternoon of the 29th Nov: 1838, at the Commencement of the "hot season", sometimes also called the "Rainy season" — but although the Rain may be said ... more frequent than during the remainder of the year, ... inclined to admit the fact in any of which sense, viz — that it, we suppose to be just by the above appellation. We had a good deal of wet during the first four days but ... period the report is ... [illegible] ... We had ... [illegible] ... on first arrival, and though more usually the Thermometer was often above 90°, we did not suffer so much from the heat as we have ... in the United States. Rio is said to form an exception to that report to tropical climates generally — how far this may be true we have no ... of judging.

The country about Rio is exclusively Granitic, the rock ... [illegible] ... with composition — and the same beyond the Organ mountains, as far as we journeyed viz — about 45 Geographical miles north of the city.* Granite ... [illegible] ... and the ... [illegible] ... fished up in the Bay, and also to substitute a peculiarly adhesive kind of clay.

The surface is remarkably "mammelonnée" (full of conical hills), and much more rugged than Scenery is usual in Granitic Districts, much more at least than any which have fallen under my observation in the United States. Almost every eminence presents some part where the smooth rounded rock is bare, destitute of vegetation and inaccessible; and naked precipices are by no means unfrequent. From their elevation they may even be termed "mountains" — The "Sugar loaf", at the entrance of the Bay, as determined by the officers of our squadron, is ... in height — The "Corcovado" 1800 — The "Gavia" and many other eminences to the Westward exceed this in elevation — While the "Tijuca Peak" ( ) the highest point in the environs, will probably fall not far short of 3000 feet. Between the head of the Bay and the base of the Organ Mountains is a strip, about ... miles in width, of comparatively level ground; where at least the hills are less elevated, the valleys more gentle with intervening ... or rather swamps. — These mountains however with the country beyond them, possess the same general features as

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* Garnets were the only minerals observed, not entering directly into the composition.

as the environs of Rio, only on a grander scale. The highest part of the range lying between the Estrella pass and that leading by Marck's (Serra do Coito) presents the aspect of a continuous ridge than any other portion within view; at least when seen from Rio. From the prospect a stranger might be led to suppose there was something columnar in the structure of the Organ Mountains, something like a Basaltic formation; there is nothing of this sort about them, only some sharp pointed needle-like Peaks, near Marck's. The highest point is also near Marck's, though still estimated a day's journey distant. Mr Marck informed us that an English Botanist & Mr Gardner by pursuing the paths of the native Indians, had succeeded in getting within a few hours of the summit, but the summit itself is not known to have been reached. Its elevation will probably exceed 7000 feet, as Mr Marck states his Fazenda to be situated 3100 feet above the level of the sea.

On approaching the coast of Brazil the water changed to a green colour, but had not the light clear tint we find on our own Coast; — Nearer and within the bay, the colour was dark olive green; and towards the head of the bay, where the water is shallower and the bottom muddy, it became yellowish-brown.

The Bay of Rio Janeiro at its entrance, the most contracted part, (between the Foots), is about one G. mile in breadth. It enlarges almost immediately, and continues of the average width of nearly 3 G. miles, to the upper part of the bay, a distance of about 5 G. miles. Beyond this the Bay expands into an oval form, bounding a little eastwardly, 16' in extreme length with a mean breadth of about 9'. At various points the entire G. coast of small streams, the most considerable of which is the Iguassu, having a direct course of about 32' and draining an extent of country of great width. Eight other streams have an average course of 13' each. The upper part of the Bay, principally towards the eastern border, — the remainder are unimportant. These streams are navigable for boats a greater or less distance, in general as far as tide-water extends — the Macacu, (which was not visited by us) from the swampy nature of its lower course, may probably afford the most extended navigation; the Inhaumirim is navigable, in a direct line, 6' to the port of Estrella; the Rio Magé 3', &c. &c. — On the whole, the little isolated basin containing the

the Bay of Rio, may be estimated at 60' in length, from East to West, by 30' in breadth.

Besides the "Ilha de Governador" which is of considerable size, the Bay contains a great number of rocky islets, and is various places, rocky projecting down the coasts. The shores are very much indented and a map of the Bay should be consulted to represent the actual configuration; only a few words will be required to describe the principal features, which are very similar, between which are usually beaches or the usually rocky coasts of the Ocean. Towards the upper part of the Bay, where the shores are more considerable, the beaches predominate and the promontories are more distant and less abrupt. The land rises again towards the same general features — hilly promontories projecting into the Bay of which it is most usually impossible to pass. We could not help remarking in our various excursions that the inhabitants appeared to hold very little intercommunication with each other, partly perhaps owing to the configuration of the land, and the Environs of Rio presented in this respect an epitome of the whole Empire. To the eastward of the Bay and behind a considerable reach of sea-beach, lies a shallow lagoon of brackish water, called the "Lagoa de Piratinga", and to the westward is a similar extension, the "Lagoa de Freitas", at the time of our visit these did not communicate with the Ocean, but we were told the Bay sometimes breaks over with them. Further to the westward lies the still more extensive Lagoon, commonly called the Lake of Sepetiba, but we could form no accurate idea of its magnitude. The islands outside of the Bay are, as may be anticipated, a mixed lump of granite.

The harbour of Rio is celebrated for its capacity and safety, for the latter it is somewhat indebted to the climate — not being subject to tempestuous weather.

Opportunities for observation.

Knowing that we were to be detained sometime at Rio, I had hoped after spending a few days in the vicinity in order to become familiarized with the Country, for an opportunity to visit the open Country, or Campos, understood to be 40 leagues distant. I was desirous of studying in detail the causes which in this climate prevent the growth of forest trees, the different Botanical and Zoological features which are the result, and the sudden transitions. I was also desirous of viewing the

the "Caatinga" woods, the intermediate district where the trees lose their leaves periodically from drought; the want of water producing the same effect as our Winters. The Rio Paraiba is to be in the route, and a great Tropical river [illegible] a primitive object of interest. In short a finer opportunity of learning the influence of Climate on Vegetation, is perhaps no where presented. How this plan was frustrated will appear in the sequel.

Nov: 21st. I had scarcely been on Shore a half hour, and was still in the Streets of Rio, when I was so unfortunate as to [illegible] an Arab. — Being aware that the accident would in all probability confine me to the house for many days, fearful even lest it should be my only opportunity of seeing the Environs I decided on improving the interval prior to the commencement of inflammation and Continued my walk. It was my first visit to a Tropical Country, excepting the few hours spent at the Cape Verd islands, and I had landed with my head full of "the Palm and the Palms" soaring amongst the Forest trees, "dense impenetrable woods barring out "the progress of Cultivation, or where a narrow clearing is made with infinite "trouble, the soil pouring out almost spontaneously all that is required by "the necessities of man." — I expected to find the trees "everywhere interlaced with "woody vines (Lianes), the old trunks and branches buried as it were under "the parasitic vegetables the undergrowth woven into an impervious mass of "foliage, and the whole teeming with animal life — an immense variety of "the most splendid insects, clouds of butterflies, the "rulers of the sun", the "gem-like Humming-birds, darting about every flowering tree, other birds of "brilliant plumage or singular form to be met with at every step, each "moving in its appropriate sphere, the Tanagers, the Parrots, the Jacamars, "the Toucans, the Manakins, the Trogons, the Tamatias, the Ant-thrushes, the "Timamous, the Jacamars, the Ampeline, the Anis, the Yacous, &c &c: — troops of Monkeys "passing from tree to tree and among others the Araguato, uttering at night its "fearful note, the Sloth also finding a refuge among the tangled branches, while "about the roots otherwise tenanted by dangerous reptiles, creep the unwieldy Ant-"eater and Armadillo, &c. &c." — These things do exist; but the visit of a few hours but they require looking for, and in general with no ordinary degree of diligence.

Rio Janeiro.

To return to matters of fact — I had hoped at last in a Tropical Climate, to have gone [illegible] of European weeds, but the Cruciferæ &c. were still to be met with in the outskirts of the City, though certainly not abundant and apparently not in a very thriving condition: — ready perhaps to give place to those which seemed of native growth. Weeds of any kind however, did not appear to be troublesome.

Our route lay through a cultivated district, where the hand of man has extirpated the original vegetation; it seems without any more difficulty than in our own climate, — but we found many objects of interest by the way side; including &c. — After walking in all perhaps five miles we reached an uncultivated spot, stript indeed of its trees, but where alone we had a proper field for observation. We were not able to spend much time here, for my foot becoming painful I was obliged to return. The week following I was confined within doors.

Dec. 1st. By the kind arrangements of a friend, whom I unexpectedly found residing here, I was enabled this afternoon, though my foot was far from well, to make a journey to Tijuca, about 12 miles distant. I found my friend passing the hot season, with his family, at a Coffee plantation belonging to a Mr. Lemoine. —

Dec. 2. This morning taking a boy for a guide, went to the top of the ridge on the right looking up the valley, or that intervening between the estate and the sea. In the course of my walk I got into the primitive forest, and found it fully equalling my expectations, so far as regards variety and the luxuriance of the foliage. There is enough of magnificence in nature without resorting to descriptions which only apply to Tropical land. — Returned to the house in time for a short excursion down the valley, along the banks of the stream, which was equally productive in its results — Though we were not successful in procuring any fresh water Shells. —

Dec. 3. — Raining constantly, but did not deter me from making a short excursion to the woods on the left, below the house. In short, I found the neighbourhood of this plantation wilder and more interesting than any ground I subsequently visited in the immediate environs of Rio. In the afternoon the rain having somewhat abated, returned to the City. The same evening

Capt:

Capt. Wilkes authorized the formation of a large party to visit the Organ Mountains, allowing eight days for the performance of the journey. Several individuals signified their intention of availing themselves of the offer and the party was considered as almost made up.

Dec. 4th. I was forced to remain in town this morning to look after the arrangements for the proposed excursion. At the mention of a journey into the Interior a hundred obstacles were suggested by foolish or designing individuals, persons at least who ought to have known better. If I had listened to a tenth of the idle tales which were uttered, the least to be done was, to load one mule with Copper money and a second with the rations & usual means to prevent actual Starvation, &c &c. — In the afternoon I learned by a fortunate chance, that we were all on the wrong track — to undo the existing arrangements and form new ones was soon accomplished and every thing was in readiness for starting on the morning. — At the earnest solicitations of some friends who seemed exceedingly anxious to make the journey, in consideration of the weather &c. &c. I yielded — perhaps I should not, but it may be useful to me hereafter — and consented to put off the journey for another day.

Dec. 5th. Made an excursion to the Sea Shore beyond Botafogo, in company with Mr. Courtenay. I had all along been desirous to learn what were the prevailing plants, but I was now almost tempted to conclude that there were none — Every locality seemed to afford a great variety what was not to be found therein. It was well observed by a Botanical friend, who "once flattered himself that he knew every plant of Brazil, that he who has only studied them in Herbaria can form no idea of how they grow in their native soil, and that the sight alone of the latter is worth the Voyage": — for myself I can only say that for sometime after leaving Rio I could not look upon the specimens we had preserved with any, without a feeling of disgust. — On returning to the City I found that the Organ Mountains were not very much above, and that our party had increased to Mr. Burkewidge and myself. — Meeting however some Officers of the Squadron who expressed the strongest desire to go, and believed that a party could readily be made up about the 15th. I felt

continued

constrained to wait the result of this last attempt.

Dec. 6th. Word was sent from the Ships that the Officers could not be spared from the Vessels, but did not reach me till it was too late to think of starting to day; and I spent the remainder of the day in a short excursion along the Bay shore. — All had not been lost by these delays — the weather had been extremely unfavourable for the last three days, and there was a prospect now of a change for the better.

Dec. 7th. — At 6 a.m. started with Mr. B. and a guide, who spoke the language but was never on the route before, together with our three boys, in two of the Palmeira boats for Estrella. — The boats used for navigating the Bay are undecked, felucca-rigged, say of 5 to 10 tons burthen, and besides the sails are moved by four blacks who stand and throw their weight on the oars. Great numbers of canoes, made of the trunk of a tree were also met with, fishing &c., and it is a rather rare thing to be seen several miles outside the Bay. Although the City front seems very well adapted for Wharves, Sea-vessels almost universally lie at Anchor, and of course where they show to most advantage; — and though not equalling in number those to be seen at our principal Sea ports, are surprised to find such a forest of masts in this Southern Hemisphere. The large proportion of vessels from the North of Europe amongst Swedish, Danish, &c., caused partly by the war, but the English flag, at least among the merchant craft, was comparatively few by in comparison. The Custom boats seem chiefly employed in the Palmeira, which were pretty numerous but square-rigged vessels bearing the Brazilian flag, (ating the Ships of war, were comparatively rare — The Pilots appointed by was pointed out to me, for the first time. These boats [illegible] constantly during the day time we expect to hunt on the coast once a week; and during one day the first experiment was made of landing on the beach before the Captains of the Felucca-boats seemed to be very generally Foreigners: no less than three of those we met with were Genoese.

We passed up the Bay, among the isles, which were a very inviting as- pect, and after rounding the point of the "Ilha do Governador", reached the Estuary of the Estrella river. — Near the entrance the water was very shoal, and our guide had — the banks were low and miry, and for a long way a mangrove swamp, which

will be noticed more particularly hereafter. The Banks preserved the same swampy character, and the entire surface continued of the same level with the part of Engenho, I described in a direct line, but much more by the windings of the Roadway. The Water however gradually became perfectly fresh. We remained a short time in the neighborhood of Estrella which afforded interesting pursuit for the Botanist; but as we were to return here, did not commence our collections.

At 2½ P. M. took horses. After riding perhaps a Couple of miles, we were stopped by some Soldiers at a Guard-house. As our Guide was not sufficient Pass to think that there was really some precaution in the stories we had heard, resulting in the attempt of the Brazilians not to permit visiting the Interior, I regretted at least not having taken the preliminary necessary provoking passports — On going up to the man who was arranged; the barrier was formed of a slight bar — and it became evident that this being the main road to the Interior, established by Government at great expense it scarcely matter made of "taking toll". — We rode on through a gently undulating district interspersed with swamps at its sides for the most part covered with large Shrubs or trees of the largest dimensions were not observed. In these situations the purple flowering Melastomaceae were particularly conspicuous. After riding about 2 leagues we reached the base of the Organ mountains.

It had been raining at intervals during the day, and the mountains had been concealed entirely from the time of leaving the City, so that it was impossible for us to determine whether our road was leading up the main portion of the range, or which was the highest point. From this time we were very much embarrassed in all our early operations about Rio. — from the want of correct information, which seems very generally to prevail, the highest land (to which the Botanist naturally directs his steps), ought to be made out from our own observations — from different points of view: — and when determined, no one could tell us how it was to be reached.

We concluded to ascend the mountains the next morning, intending to remain for the night at the Guard house near the summit of the pass. The road is paved and has a uniformly steep ascent, too much so for wheels though if the latter were in use, there is no natural obstacle to the construction of

of a Carriage-road. Abundance of novelties, to us at least, in the Botanical way were met with on either side. — A League brought us to the Barrier Gate; but finding no grass for the horses our guide thought it necessary to proceed — We accordingly crossed the summit and rode on another League, when in the dusk, to our Joy of entertainment, the comforts of Bed & Supper burst upon the house, as is pretty generally the case in Brazil, our Apartment was rough in its exterior, but within contained little in accordance with our American ideas of Comfort. Like others of this same Character we met with afterwards, it was a long one Story building, containing under the same roof the stable, a Store, the accommodations for travellers, and the Apartments for the family; the according to the custom of the country were only known to exist by report. We were tired and wet, and were ushered in where Rice was boiling for our Dinner — it's roof to be sure was good, but the walls admitted a free Circulation in every direction. After waiting rather an unreasonable time Coffee was served up together with rice and a fowl, the latter however requiring yet some cookery. We were glad to retire and make ourselves as Comfortable for the night as Circumstances allowed. We were not yet sufficiently initiated in the Customs of the country to know that our accommodations were excellent.

Dec: 7. Rose early and put on our wet clothes — My own bed was on the earth during the night for the want of the Mosquito curtain, and a pertinacious Rain continually beat within but I began to think might is the thing, but it now burned it was only a flood. Understanding that we had to cross Serra do Mar, I ordered the dish of the Country, Viz "Carne Seca" and "Farinha" or Jerked Beef and Dry Farina Meal. With the addition of a few eggs and a Cup of Coffee we made out exceeding well; and after packing a deposit of the plants we had collected the day previous and early the same morning, took horse and proceeded. — We were astonished at the vast number of Loads we soon fell in with, heavily laden, in droves, going and returning from the Mines. The weather was more promising. Magnificent Plants yet new to us, grew on either hand. After proceeding about a League we were advised not to go beyond "Padre Correa's", as the road was represented as almost impassable. Another League brought us

on

us to this establishment, which is known by a large tree, a species of which, which contrary to the general rule in this climate, extends its branches horizontally. We have seen from the steeples and roofing appearing just in every direction from the trunk. We stopped here a while to give our horses a bite, and then continued our journey, knowing we had not much of following the tracks of loaded mules! — The road to be sure contains a few miry spots but a trifling additional expense would have made it fit for wheel carriages all the way from the mountains, & indeed the same expense apparently had not. We crossed a fine bridge over the main branch of Piabanha and extended our journey about a league beyond, in all four leagues from "Padre Luiz".

From the summit of the Estrella pass the descent had been very gradual and we were yet apparently at a very considerable elevation. The road all the way among the mountains and the general character of the vegetation was the same as about Rio. Our stopping-place was at a cluster of small houses, on the bank of the river, near the bridge, & the road leading from it to the right towards the mountains. It was yet early in the afternoon, but our object was to collect provisions to carry back with us, and this seemed a favourable location. Our slips of canvas were immediately thrown at the brink of the river. We were surprised at the volume of water, and tasted it very but got fresh water & but neither here nor in all this journey could we find the least trace, even fresh water fish, although we tried at every favourable opportunity. It may be that the streams were too much swelled by the rains. For the botanical way we were evidently in very fine, and we were at it because the last part of it we returned to the house.

The Hon. Mr. Ingersoll, Mr. Wise, and Mr. Graham, and of course was delighted to find in Mr. Graham one of the language. We made our of the best the place afforded, and in addition to our "farinha & cane rum" we treated to the good old New England dish of Indian pudding. — Mr. Graham and a mat on the ground were divided between them, and we got through the night very comfortably.

Dec. 4th

Rio. Janeiro

Dec. 9th. Rose early, and was more anxious preparations for carrying our collections. — In a Country like this, where the Colonist can hardly procure a single article in our favor, this requires no slight degree of exertion. We had taken care to have our boxes provided with pots, expecting to return for the most part on foot. We were furnished with a Cabin trunk which was to be previously for clothes, Books, papers &c. &c.; and had furthermore made out a rule to hand ourselves one specimen of each, and that as small as possible, without being the character.

Leaving our guide to come on with the horses, we proceeded on our return; procuring many plants and examining many localities we had marked the day previous. At Padre Correa's we were fortunate enough to procure a few Bananas, the only place beyond the mountains where we saw fruit of any description. — We could not help being amused when we thought of our preconceptions of "Life in Tropical Climates". We had imagined that Industry was an article almost unnecessary, that the inhabitants were surrounded by every delicacy, that the Ennui in these Countries were not further advanced one removed from the excess of luxury or the greatest "enervating influence of the climate" — the fatigue and exposure we now saw undergone by the inhabitants, were far from our thoughts; least of all did we expect to suffer from cold. Mr. B. and myself got along very well with the jerked beef and ground mandioc, but our guide who by some chance was a fine "Hampshire Nancy, complained audibly, as well as of the want of fruit &c. The reward of the Country "What dont kill you will make you fat" expresses in few words all that it is necessary to say on this point.

We were now at no loss to understand why so little is known of the Forest trees of Brasil, a matter which has been commented on by some European Botanists. A little incident which occurred to day may be worth relating as illustrating that point. During the whole of yesterday's journey a yellow flowering tree was very conspicuous in the Forest. — Early this morning Mr. B. took the bearings of some of these trees, as I thought with sufficient accuracy, but after reaching the spot they were not to be found, though like an "Ignis fatuus" inviting in other directions. After wandering

walking perhaps a mile I was forced to return without success. I mentioned the circumstance to Mr. B, observing that it would be impossible to return without making out that tree, and stated my belief that such would be the result. He thought otherwise; and we had a good-natured difference on this point. During this day's walk therefore we were both on the watch for a favourable opportunity, until Mr. B. [illegible] gave in — when suddenly the object appeared within grasp, a trunk on the edge of a clearing. We both left the road and in a few moments reached the spot; when lo! there was the river between — there it was however in plain sight, increased a good deal in its dimensions, but only requiring the river to be crossed — the stream was much swollen, rolling rapidly over a rocky bed, and was wide and deep. But Mr. B. nothing daunted, after throwing down his luggage, & his coat, waded in & in a few moments disappeared in the woods on the opposite side. It never occurred to me to doubt his success; but after a time he returned & by signs & words I understood that I must wait & he would fetch me. And I now determined to try myself; although I crossed the stream and came exactly to the spot, but my slender tree had increased greatly in its dimensions, and the trunk was now a foot in diameter — Unwilling to give it up, I ascended, but whether it was that I had been so long out of practice, or the bark being wet and slippery, for it was raining heavily, after climbing perhaps two feet I was unable to get higher and was forced to give in.

The rain now began to fall in torrents, and we were glad to seek the nearest house, where we were soon joined by our guide with the horses. We waited an hour, but there being no signs of abatement and night coming on, there was no course left but to mount our horses and make the best of our way to "Padre Luiz". The latter part of our ride was in the dark; the streams we had to ford were swollen to a dangerous extent, and continually increasing — at one point we had nearly abandoned the idea of proceeding further, but happily we all got through in safety. We little thought [illegible] in front of Padre Luiz's door, which we had hardly noticed before, except as supplying the house with water, was now fifty feet in width and up to the horses middle. — Our good host was astonished to

to see us, but received us hospitably and very furnished us with dry clothes from his own Wardrobe. Such a heavy rain had not been known there for a long period. –

Dec. 10th. – We had intended this morning to have proceeded on, and obtained leave to cut down some of the yellow bark trees, but now after mustering in a convenient distance; both the Bye-path opposite landing of the Plantations in a South Eastern direction; and as we afterwards learned to a path belonging to our host. As a ground rule the botanist will find it useful for advantage, to avoid as far as possible the Rio established roads – even where leading through cultivated districts, the change from living out-off from the forest is, there is a marked tendency to uniformity in the vegetation along the immediate margin. –

It was only here that we could see any way further embosomed with formidable plants, and began to find the Epiphytic vegetation, to much in vogue at the present moment in European green-houses. – We now had an opportunity to form a conception of the majesty of the primaeval forest. Two female trees above Cecropia, some 4 to 5 feet in diameter, were nearly eight feet like a mile out their side-spreading arms, which still bore a kept an upward direction and were loaded with formidable plants, far beyond our reach. One slender Cecropia, with a smooth whitish, somewhat flexuous stem, was as near as we could judge 100 feet without a limb. It was here also that we saw the first Palm that crossed us got in direction. Our path still continued in but continually upwards, and we found here more plants which really seemed to indicate a change of climate, as two Cacti and a Goodyera resembling R. pubescens of North America – at length we reached what we judged to be the summit of the Ridge, from the time we had been ascending, for it was now afternoon, – We ascended some distance to see the country of lying on the Southern Slope of the Organ Mountains, but the weather being as usual, it was impossible for us to get a prospect; and we returned to the Summit. – During our ascent we had noted an eminence to the Westward of where we were, as being apparently the highest point within view – Neither from

proposed to direct our steps; but to plunge at once into the "trackless woods" of Brazil, required yet some effort. On my producing a pocket Compass however, the complexion of my Companion were brightened, and we proceeded, as it seemed, without much difficulty, among [illegible] trees, with [illegible] on the left on the [illegible] side, the ground gently rising, when we reached a space where some time the trees had been destroyed and the underwood entangled with the [illegible] of a Bamboo-like grass. The difficulties of the way being thus removed, and the Light House still [illegible] miles distant, though apparently not much further than we passed [illegible], we thought the Light not worth the trouble and determined to proceed to the Sea-shore, perhaps on higher ground than any we had previously visited, and yet could not perceive any decided change in the Vegetation; and the trees did not appear at all stunted in their growth. Our return was more rapid — we soon reached the Custom House and hurried back as the rain was increasing — We arrived at Padre Luiz's about an hour before dark, and having called we had found, within 100 yards of the house, a young tree of the sort which gave us so much trouble yesterday. — It is a species of Cresalpinia.

Dec. 11th. — After dispersing of our Collections we sent the horses on to the Guard-house, where we intended to stop for the night, determined that for once they should forego the luxury of "fresh grass" for our own convenience. We followed leisurely, and found much vegetation by the way. — Went alone to the top of the peak lying eastward from the summit of the Estrella, was, and elevated above it perhaps 1500 feet. Commenced by a foot-path which however not long traceable. — Went long heard of the "difficulty, almost impossibility of penetrating a Tropical Forest", and was unprepared to find it less troublesome than our own woods, at least in our Atlantic States. The "Mallo Virgem" or Primeval forest of Brazil, according to our own experience and the account of intelligent Residents, is easily traversed in any direction; it is only in old clearings or where the trees have been removed from whatever cause, that the tangled mass above-mentioned gets profusion, and offers any serious impediment to the Traveller; and even this is not to be compared with our Similar thickets. The Brazilian may be assimilated to our Western Forest in this particular. — We went down

soon became obscured, and the woods dripping wet. more so than I had ever previously witnessed, although the sky to-day had been clear; the shade, the spongy nature of the soil and the abundance of Bromelias may have contributed to this result. Dorstenias, which seem peculiar to such situations, and especially Begonias, were abundant; and many Botanical curiosities were met with. I reluctantly determined to return, but was enticed on, by the activities which would have been exercised but for the heavy rain that fell, although pretty sure of the difficulty of a return under such circumstances. At last having gone so far I determined to make a serious attempt for the summit, and by persevering gained it. The summit was pointed and there was no difficulty in selecting the highest point. The trees were all stunted and gnarled, scarce ampulture over 30 feet in height; it may be more from exposure than the actual elevation. I selected the stoutest one to get a purchase and soon found it a task on the highest point of the range, somewhat to the East. I mentally worshipping my present situation from fear of the return of the Bandits when my attention was suddenly attracted by a number of three trees not before seen by us, and three different species of Bromelias (Vriesea), the first of the kind we had met with. But time was precious to stop here — I descended and hastily cut my initials on the north side of the tree (one of the Sapucaia), and commenced my return. — I must have erred in this operation, as I thought very fruitlessly, and had no doubt of being able to trace the return track — after a time I found myself continually being brought up by precipices and the bed of a torrent which at times — Difficulties increasing rapidly, I was at length brought to a stand — Time was of use in getting down as fast as my Legs would bear to reflect, nor likewise myself for not having taken the bearings of the Path before I started. Seven minutes and I was on the wrong side of the Mountain, and nothing was to be done but to regain the ridge and steer my Course to the Northward and Westward — It was getting late, and I now began to speculate upon the probability of being obliged to pass the night in this place. — Often as it did not occur to me before — I had no means of making a fire, but then the temperature was pleasant; I had by this time begun to regret the loss of the

Venomous Reptiles, and the Wild beasts of the forest. Here was but a slender chance of meeting. I thought I could have slept there very comfortably, but as my Companions would have been troubled on my account I felt anxious to get down. I now pursued a more definite plan — having regained the ridge I kept it in front judging as well as I could by the angle of light — I soon learned to avoid the open where the sun light is let in or where the trees did not grow upright — I found no further difficulties, and reached the road I first left at the same point where I had left it. — This peak is well worthy the attention of the Botanist, and may be ascended without difficulty if the proper course is followed.

Dec. 12th. — We proceeded down the mountains leisurely having rest on the horses, and were not to be unmindful in our Collections there on the fore-part of the day. We reached Estrella early in the afternoon, but found our guide had taken no measures to secure us a passage to the City, as requested — some delay ensued on this account, but a boat was procured, and leaving our guide and horses to shift for themselves, we started before sundown. — As soon as it became dark we were surrounded with Insects and myriads of a minute fly which were most troublesome. We stopped a long time at a large public house at the mouth of the river, where we found perhaps a dozen other boats like our own — at last we pushed off, with the rest, and arrived at the City at 3. A.M. of the following day.

Dec. 13th. — Went on board the Rancoma. Was now prepared to undertake my proposed journey to the "Corcovado"; but there was so much uncertainty about our time of visiting Mud Capt. Clarke was unwilling to give leave of absence for ten days, the time I felt was thought to be requisite for performing the journey profitably.

Dec. 14th to 21st. — This interval was spent in excursions on foot in the immediate neighbourhood of Rio; as — to the Summit of the Corcovado — to the "Lagoa de Petenunga", in Company with Mr. Woodbury — to the Bay shore beyond the Botanic Garden, returning along the Road in front of the "Lagoa de Freitas" — along the opposite shore of the Bay, and the sea Coast beyond the Castle. I was not fully satisfied with my returns from the Organ Mountains, of the limiting influence which the land of snow has had on the Vegetation about Rio. Even where apparently the most wild, the forest has been cutted, and there are few or none of the Original Stocks remaining. Part of this time was also occupied in packing specimens to be sent

Dec. 22. — Went on board Ship and learned from Capt Wilkes that the Squadron would certainly not sail for five days. — Communicated this intelligence to Mr B. and as he would not be at liberty on the morrow, requested him to visit us only on the following day, to which he assented. The view from the Organ Mountains should marked the highest ground about Rio, the Central one of three Peaks, and which is generally spoken of as the Dejeuer Peak, or "Dente das Piedras". It was now my intention to mark this point.

Dec. 23. — Started at 6 A.M. with mules in Company with two young men who were eager for a "dejeu" or they considered it. Ascended up the Tijuca valley, and from the highest point turned off to the right and ascended the hills. We reached the plantation of Signor Mendoza, to which we were directed, at the foot of the mountain, and here left our mules. From the house the "Dente das Piedras" looks like a mass of granite, of very imposing dimensions, and entirely inaccessible on this side. We must however at all appear it appeared that we might by the proper object of our search, and not being able to procure any satisfactory information from the Negroes, we crossed a ravine through a Coffee plantation and made our way to the next estate. — We find here an opportunity of witnessing a peculiarity in the Brasilian Character, we had previously heard of a little of this "Know Nick" order — We were amused at the rapidity with which, after a little time and patience, the hens began to lay fresh eggs &c. &c. — Our solicitations would not receive anything in payment, and pressed us to stop and dine with them on our return from the summit, promising us "the fun". — We proceeded sometimes rapidly, sometimes a pace which let us chiefly through cultivated lands, but after several attempts to reach the summit through an abandoned Coffee plantation, in which we were foiled sometimes by heaps of large boulders &c. &c. we were forced to give up the point. We now crossed a Ravine and found a path which led us to the depression between this Peak and one more rounded, that nearest the sea. From this point we had a fine prospect, overlooking the Corcovado and extending to Cape Frio on the East, and Commanding a long reach of Coast, with Lagoons and a considerable space of land Country on the West. Our mistake also as to the Cibio height

height of these three Peaks was now obvious. My young friends were now weary and suffering from thirst — The Bitter Oranges which were hanging about us, were not to their taste, though I found them very refreshing. I persuaded them however to wait for me half an hour while I attempted to reach the summit of the nearest Peak, which did not seem far distant, and the ground all clear. I proceeded alone, crossed a slight indentation and was approaching the summit, when the way becoming obstructed with low bushes &c; and the highest point still perhaps an eighth of a mile distant I found more time was required than that I precipid. — It was now near 4 o'clock, and I might easily have kept a playful appointment I had made on board ship the day previous, for I had fixed on this hour to be at the top of this very peak. I soon joined my companions and we returned at a rapid rate, and after rather a fatiguing walk arrived at Signor Mendoza's; where in the absence of the proprietor, we were hospitably received by the Wife of the "Steiler" a respectable Brazilian Woman, who did not the honour to say on being told that the "Americanos were "bons gentes". — The sky being clear and a fine breeze we had a pleasant ride back to "Engenho Velho"; — After an unsatisfactory day, as regards Mr. Stuart.

Dec. 24.th Returned to town early this morning in the omnibus — Mr B. was in time to his appointment, and I was prepared to join in the mother trip to the Corcovado by a different route. We went a little to the by express but we stopped. We knew between us scarce a dozen words of the language, but that did not trouble us and we determined not to be bothered with horses. Mr. B. stept out to make some little arrangements. I got a friend to write down 2 or 3 phrases, and then went to see about a boat for "Tiedade". I found a fine breeze blowing and a boat ready to start; so fair an opportunity does not often happen. Having agreed with the Captain I returned for Mr. B., and we soon joined the vessel. There was no time for letters, &c. proposed by my friend — By 11 o'clock we were under sail and in a little over two hours we were at Tiedade. It had long been evident that the Estrella pass was distant from the highest portion of the Organ Mountains; and it now appeared that the road to Mendes was likely to lead the most the other way, in fact to a lower point than the former. While on the other route we had heard of a cross-road from near Padre Leiz's to Magé, a very little known, but practicable — this we calculated would have brought us near the position we wished

wished to visit. — We had also heard of an American gentleman, a Brunswicker, who had resided twenty years in this vicinity and we thought we might be able to procure some information from him.

At Pindade we could not make our wishes comprehended, although we found an interpreter. They seemed to take it for granted we were bound to Minas, and knowing our business better than we did ourselves, gave us a line to the first post to show on the road. — We walked on to Magé, a small hamlet, with a church that shows well in the distance. The road was level and led in no place over hills, that from the Heights they pointed indicated the proximity of Entrerios water. At Magé the road crossed a good deal of wet ground, and we here found three fine agouties. The water appeared to be fresh and the presence of tides proved that it was navigable. Beyond Magé the road continued level and we saw occasionally two species of Palms the fruit of which we had frequently observed in market. The weather had been exceedingly warm, but becoming cloudy the walking became more agreeable. We passed a swamp of low trees where the large purple flowers of the Cupid-tree (Cattleya) were growing strongly and which seemed to promise other interesting plants. The road was very winding and had a general inclination to the right, greater than was agreeable. We had intended taking the first turn to the left that gave any sort of promise of leading to the right point of the mountains, but none appearing, we were led accidentally to the Establishment of "Jozé Caetano" at "Frexeal," the regular sleeping place of travellers to Minas. Here we found more comfortable accommodations in many respects than we had been used to in this country, although the exterior was much the same.

Dec. 25. Frexeal, at the foot of the mountains is estimated 16 miles distant from Pindade, and it was yet 8 miles to Minas. — We crossed two or three streams where we found Unios and saw 3 or 4 kinds of fish, which surprised us after our experience on the other route. The road up the mountain is a mere horse path, in many places bad for travellers, especially ladies. The higher we ascended, the more we became convinced this was a superior ground, both for the Zoologist and Botanist, to the Estrella route. We walked on

leisurely, collecting by the way — Killed the second snake I had seen since my arrival in the Country. — The summit of the pass commands a magnificent prospect, and is sometimes called "Boa Vista" — We reached Mauricio's at about noon, and found the house overflowing with Visitors who had assembled to pass the holidays.

This is a large Estate containing I think it over about 50 square miles a very small proportion of which of course is cultivated. There are a great many Negroes, and everything about the establishment is in the most perfect order — a large Garden devoted principally to fruits and Vegetables, but also contained pl[illegible] by an ardent naturalist for Exploration to take charge of it — Domestic Animals of every description in abundance. Indeed this place seems to be well known in all the Country round, and we had heard of it on the Estrella route. It is a place of fashionable resort for the inhabitants of Rio, and especially for the English. — The House also, though very Comfortable, we might be disposed to think a little too much in the Brazilian style. — Mr. March informed us that "the pass was 3100 feet above the level of the sea, and that the temperature in Winter was sometimes down almost to the freezing point. — The fruit of the Bananas were good for nothing, and he had experienced much difficulty in getting the Peach-trees accustomed to the Climate." We pointed out to us the point which has considered the highest ground in the Organ Mountains, as it appeared so often from various quarters — He did not think it had ever been reached, or the actual height ascertained — Some observations had been taken by different persons, but were not accurate. What he would like had been performed — Mr. Gardener, the English Botanist, had been within a few hundred feet, having derived much assistance from the guides of the Estate, and found the Vegetation resembling in several particulars that of temperate climates, Vaccinium, Viola,

&c. &c. — The ascent was by a somewhat circuitous route, and "would require two days"; a period that exceeded our limits. — Mr. March was acquainted with most of the Naturalists who have visited Brazil, and several made his house their home for Months. — We were well received, although we had intended ourselves

ourselves rather inconveniently, and our clothes were against us and found ourselves accommodated while we saw others buried by.

It was now near 1 p.m. when having turned the [illegible] (the N. N. E. ward) had been visited by Vulcanite, we climbed with the intention of "seeing up the day-light" on that direction. It appeared perhaps 1200 feet in elevation, and almost inaccessible on every side — [illegible] to N. E. was [illegible] if not more than opposite to be [illegible] and we bent our steps in that direction. I had never however entertained seriously the idea of ascending, and in consequence had taken none of the proper precautions, calculating to find ample occupation about the base. My companion however was constantly looking upwards, and soon reached the first part of the mountain, when after some exertion he found a tolerable [illegible] and began to climb the best of our character. The [illegible] of steepness, though evidently somewhat "green" in mountain climbing. I followed, though against my better judgement, but I was not disposed to back out of any "lark" of that description — [illegible] was the most difficult part of it, that we stuck to the possibility of a return, and what was our chance of finding it again in case we should stray to any distance. Having surmounted the difficult part of the ascent, the temptation to proceed was very strong and I in turn became bolder, and by degrees we reached the summit. There was no marked change in the vegetation, and the trees did not appear stunted, although much injured. It was only on this trip that we had met with much fallen timber, the Brazilian woods seeming remarkably clear of it, compared with our own. No time was to be lost, and we immediately set out on our return. After a time we lost the track, which was however chiefly my own fault. I had noted the position of the sun in ascending, but it was now obscured, and because we had to the Compass. We made out with some difficulty the proper direction and now were very much assisted by "the note of rejoicing" (it being Christmas day), which came up from the Plantation. Our course was still too much to the right, and the descent became difficult and dangerous — I myself narrowly escaped a fall. — The chances of reaching level ground to right became very slender —

to

the air was rather cool and we were surrounded with Mosquitoes, and as usual, were unprovided with means to make a fire. — We were continually forced to bend our Course more and more to the Westward — We did however reach the base, and just at dark. — at the house we learned that the Path had only once before been ascended, viz: by the Monk and a friend. —

Dec: 26th. — Occupied for the day in Collecting, while slowly descending the Mountains to Tinqua, where we stopped for the Night. —

Dec: 27th. — Arrived at Pindada early in the afternoon, the usual time of starting for boats being, as we had been informed, from 6 to 8 p. m — We found two boats ready to start as was said, but the wind was adverse, and we found competition in the neighborhood; but were advised not to stop for. — We night it was discovered that the boat had begun to take in water and must have bilged to the following morning. — We hoped as we thought a partly bright look out, but at last by a piece of management were made to lose our passage. The same misfortune we afterwards found, sometimes happened to those who are not ignorant of the language.

Dec: 28th — Our host who we found was the Agent of the Company to which the large building belongs, met us passing this morning; would take nothing in payment; and invited us to breakfast, a frugal meal, consisting of a cup of Coffee! He now procured us a Canoe to take us over to the island of "Paquita", where we might probably get a boat for the City — and of course, the Negotiation was done very meticulously indeed! — We had had some thoughts of going round by land to Estrella, a distance of 12 Miles, but our Collections were now too numerous. — When we reached Paquita, perhaps 6 miles, we found the boats all gone and the wind soon became adverse. Our time here was not lost, for we here had an opportunity of examining the Shell heaps which are Collected for the purpose of burning into lime. — We were surprised at the variety of Shells of different genera, which are here fished up from the bottom of the Bay. We were unable to extend our walks far, as it was necessary to keep watch near the landing place. In the Afternoon the Wind suddenly shifted, and the Captain of a boat, which had arrived in the course of the day, offered to take us for a Consideration, which was a matter of prudence to comply with — We returned to the City almost as rapidly as we had left it; arriving about Sun down. —

Dec 29

Rio Janeiro

Dec. 29th. This day visited by M. Gaudichaud, the distinguished French Botanist, he arrived on Tuesday and we had since remained on shore each day; but to our great regret left us with a promise of returning to the Corcovado, that did not stop long; - he gave me a very pressing invitation to visit him at Paris on the return of the Expedition.

Dec. 30th Visited the Botanic Garden, but finding it rather intricate in such a Country as this did not stop long, but took to the Boat and Sailed by my former route, but visiting many Islands in the Enseada.

Dec. 31st. - Went up the Corcovado, in Company with Capt. Wilkes and Lieut. Emmons; by a different route from that taken formerly. - Observed at the [illegible] a small tree, covered with white flowers of a [illegible] pattern; did not appear to come into bloom since my former visit - it proved to be a Bauhinia - belonging to a Natural family that I long wished to see. Some small arborescent Cassias & several other fine plants were observed for the first time. - Returned by the same route; and along the Aqueduct Capt. Emmons and Peale, procured a small specimen of Lizards, Hemidactylus & Tropidolepis. -

Jan. 1st - Got on board Ship. -

Jan. 2. - Went over to Praya Grande and visited the Botanic Garden on the Bay to the South East - the Flowers wanting - and it was just Autumn flowers & fruit of the Mangrove (Rhizophora), which had been so conspicuous along the Estrella river. - Came round by the point where the Arsenal is situated. -

Jan. 3. - Went on Shore with Mr. Courtney, with the intention of taking a boat excursion, but the day being somewhat advanced, we concluded to defer it for a day; and engaged a boat to call for us at 6 A.M. - We next visited the National Museum, it being the day on which it is thrown open to the Public. It proved a fashionable resort, and the Visitors were numerous. The Specimens were not arranged and in great part were destitute of Labels, but it was well worthy of more attention than we had bestowed on it. - I may specify (from memory) a Dromedary Hoof[illegible] mounted at each end, claws, and which must have weighed 3 or 400 lbs - A fresh-water Tortoise with a flattish shell, 3 feet by 2 - series of rocks from the different mining districts of Brazil - a Collection of Brasilian Monkeys - a Collection of Birds with the Brasilian names attached

Rio Janeiro.

attached, scattered in different places; among these the Genera [illegible] & Doris. & many Brasilian reptiles and some fish - under Shells &c. &c. &c.

Afterwards went out the Rua S. Pedro, along the mountains, and this side being we found a larger and finer species of Galaxias — also a fine Bivalvia, buried in the firm heavily adhesive mud. — Continued our walk St. Christovao, and examined the soft embankments of the streams which come in that vicinity. We were soon joined by [illegible] who had been there up in Shooting, and Shells of various marine species, as Pleurotoma, & Conus, Cowries, &c.

&c. &c. Mr. Courtney would not believe they were in their natural situation; but it is difficult to imagine any purpose for which they could have been brought there; and they were in too great numbers, and quantities. — The excursion was rather barren in the Botanical way, but we procured some interesting Shells, Crustacea; and higher up the stream a fresh-water fish, Pimelodus. It being reported on board that we should sail tomorrow, went over to the island and obtained leave of Capt. Wilkes to make our proposed excursion to the island on the side the Bay. —

June 4th. — Went in Company with Messrs: Courtney, Dana & Drayton to the "Ilha dos Paes", uninhabited island outside the Bay. — Found vegetation for several hours within the Tide-mark; but did not ascend to the summit, where the vegetation seemed promising. Afterwards landed on the beach in front of the "Lagoa de Peteninga". — The sandy tract between the sea-beach and Lagoon, overgrown for the most part with scattered Shrubs, I found to be interesting Botanical ground. — We returned before dark and did not afterwards leave the Ship. —

Vegetation.

In this portion of Brazil, situated just within the Tropic, one is forcibly struck with the difference in the productions from those on the other side of the Line — of Mexico, Guiana and the West Indies. The Vegetation is still strictly American — here are the same prevailing Families, often the same Genera, but the species are very generally distinct. — The Furcraea, which entirely replaces the Mexican Agaves, is a prominent example.

In a Tropical Climate, as generally remarked by a Botanical friend, "Every thing grows into Trees & Shrubs." — Though not strictly true, one is perpetually reminded of the

Observation

Observation in the vicinity of Rio. Annuals may almost be said to be wanting; and herbaceous plants, with the exception of the Tweedieæ, Bromeliaceæ, Aroideæ Cactæ. agaveæ, the Ferns and Gramineous plants, are decidedly rare. — Two or perhaps three species of Cissus, were the only proper bulbous rooted plants we met with. — Our stay too limited to make many observations on the succession of flowers, which are said to appear at different seasons; but we were very generally able to procure fruit and flowers at the same time; a great convenience to the botanist. We noticed the same phenomenon in the Cultivated Apple, on the hills at Tijuca: in the cut timber the rings of annual growth, which we can almost mark the age, were all distinct and perhaps among the other phenomena of "contrasted vegetation" may be noticed the great disparity of different genera and species occupying the botanical scale of growth of the Bombaceæ. — From the great prevalence of evergreens and as they have been termed "perennial" trees, one might be disposed to attribute to this the "grave and mature aspect" which has been remarked of the Brazilian forest — yet they have not the same appearance of evergreens in our Climate; but the foliage evergreen rather wears the gay & prosperous youth. — That the leaves of these plants must persist for a long period, may be inferred from their being constantly found in moist shady situations, most unfit for the young delicate shoots

My friend D. was struck with the absence of what has been termed "social" plants. — "Each continent" remarked he "is characterized by some of the most diverse natural families", we see all mixed up, and it is both variety that the botanist is puzzled at a loss to discover which are the prevailing species. The same has been observed of other Tropical Countries but perhaps may apply more forcibly to this; as the nature of the soil, consisting in great part of low mountains, is favourable, as the Botanist well understands, to the production of the greatest variety within the smallest space. In a region like this, where there are so many successive spots, where any kind may perhaps be certainly not readily to be found, it has been where from the prevalence of woody plants the eye of the Observer is very generally limited below the objects of his search, where there is often great uniformity in the appearance of the leaves, where some plants only come into flower after a succession of years and these perhaps are not conspicuous, it is probable that the immediate vicinity of the City will long continue to afford novelties, notwithstanding the number of resident Collectors and Botanists.

On entering the "Matta Virgem" or Primeval Forest, the reason that so little is known

tenure of the large trees of Brasil becomes perfectly obvious. — There is a decided tendency to what may be called the Umbrella type in most of the Brasilian trees. — They rise with a slender trunk to the height of 40 to 60 feet; and the branches are then very generally directed upwards, so that the foliage is [illegible] equidistant from the observer; — and a keen eye is required to distinguish critically the outline of leaves eighty or 100 feet aloft. Even when the flowers are conspicuous, they are very generally situated above, and are concealed from the observer by the foliage. — Add to this, the number, for it is probable that the environs of Rio, (within 50 miles) may contain a greater variety of trees than all the North Temperate Zone — in which respect however, it is not singular among Tropical Countries. — In fine when all circumstances are considered, one is almost tempted to think that some species will be exterminated before becoming known to the Botanist. — It should be observed further that the appearance of youth and vigour is striking every where in the primeval forest. —

Composition of the Vegetation. — Taking the Vegetation as it meets the eye, and leaving out the Ferns & Gramineous plants, which are generally distributed in most parts of the Globe, one half of the trees is perhaps composed of four Natural Families, the Melastomaceæ Rubiaceæ, Myrtaceæ and Bromeliaceæ. — Entire and [illegible] leaves predominate exceptions, while the [illegible] pinnated ones of the Mimoseæ are decidedly rare; though otherwise the pinnated form is far from being so. — The Palms in general are much less conspicuous than was to have been expected, considering the variety; but a large proportion are of humble dimensions. — Furthermore it is remarkable, as observed by Mr. B., "that the flabelliform or fan-shaped form of the leaf was not to be met with. Vines were abundant, and the Arborescent species, in considerable variety and at least as frequent as the Palms. — Scarce any thing but yellow was conspicuous in the tints of the flowers of the Forest; I may particularize the Vochysia, the Cassias, the Combretaceæ, the Lecythis, the Malpighiaceæ exclusively, most of the Bignonias, &c. &c. — In the "Melastomas" contrary to what is usually said of Tropical America, we found Woody Vines scarce; and we very seldom saw an instance of their passing from one tree top to another; which perhaps may be owing to the comparative rarity of Scandent Bauhinias: It was chiefly in plants exposed to the sun that we found them abundant, and in very great variety. — The same observations will apply in a

in a great measure to the Shrubs; moist shady woods however seemed the proper situation of the Begonias. — Excepting the Bambuseæ the Gramineous plants in general were not very conspicuous, and there seemed less variety and less of interest among them than is usual in most Countries: in the Primeval forest they are decidedly rare; but there were Savannas generally diffused there formerly, owing to the destruction of the Woods. It must be confessed however that they received less attention from us than the other tribes. — The true parasitic plants, or those which are rootless and purely engrafted in a foreign tree, consist perhaps exclusively of the Loranthaceæ: we found them much less frequent than was anticipated, and they do not occupy any conspicuous place in the Vegetation. — The abundance of Epiphytes (using the term in an extended sense) it is well known is characteristic of Tropical America. In general they cannot vie with the Asiatic ones, perhaps however owing a great deal with the species according to magnificence of growth as we do not now remember to have seen them on the Cecropiæ. Various among them did not seem exclusive in their situation: the Tillandsieæ and their peculiar tribe of Orchideæ were perhaps only to be found on Trees, while the Bromelieæ appeared to grow indifferently on rocks, on trees, or on the ground; and there were various exceptions among the species of Rhipsalis, different from the Peperomiæ, &c: in one instance even a Cereus was seen hanging down its long unwieldy stems from a tree top. — In fine, this portion of Brasil may probably prove the "Head Quarters" of the Bromeliaceæ & Melastomaceæ; and is further characterized among Tropical Climates by the rarity of the Acanthaceæ, Malvaceæ proper, Convolvulaceæ, Laurineæ, and perhaps by the absence of the Cycadeæ. The prevailing Families may be arranged in the following order according as they furnish their Quota to the Vegetation in woods, viz

1. Filices.
2. Melastomaceæ.
3. Rubiaceæ.
4. Myrtaceæ.
5. Glumaceæ.
6. Bromeliaceæ.
7. Leguminosæ.
8. Urticeæ.
9. Solaneæ.
10. Euphorbiaceæ.
11. Compositæ.
12. Malpighiaceæ.
13. Piperaceæ.
14. Verbenaceæ.
15. Begoniaceæ.
16. Terebinthaceæ.
17. Palmæ.
18. Sapindaceæ.
19. Aroideæ.

Asteroideæ

although the remaining families are unimportant as entering into the Composition of the Vegetation, yet there are several that may deserve notice, as being by no means scarce viz Gutiferæ, Melineæ Rutaceæ as the order now stands, Passiflorea Cactea, Gesneriæ, Apocyneæ, Bignoniaceæ, Urticineæ, Amaranthaceæ, Scitamineæ, Commelin.

Most striking Objects. — Under this head perhaps should have been remarked the Arborescent Ferns, the Palms, the rich flowering bust of the distant forest, the Epiphytes, the Cactea, &c. — Every traveller has mentioned the Cecropiæ, with its "branches like immense Candelabra", appearing white in the distance, as though covered flowers; — The trunk of the Chorisias thickly clothed with spines (a character exclusive only in degree), and that of "a Wild Fig which sends out three buttressed" like board-partitions at its base, have also been noticed by others. The various species of Pothos, with their thick herbaceous stems and large smooth leaves of unchanging green, twining about the base of the trees, attract at once the eye of the Botanist. — To myself nothing so impressed me with the strangeness of form in the forests of Brasil; especially the two large Bombaceæ, whose naked stems, furnished at every joint with a whorl of branches, pierced among the branches to the tops of the tallest trees, and are often seen towering like a naked Pillar, when they can procure no further support. — But of all the productions of Brasil there is none so conspicuous as the Bromeliaceæ, with its tuft of stout rigid leaves pointing like bayonets in every direction from the centre of which stands up the tall herbaceous flower-stem: some specimens we saw beyond the Organ mountains, had the leaves twelve feet in length, and the flower stem eight to ten inches in diameter and rising full forty feet: such an object, if it could be suddenly transferred to the streets of our Northern Cities, would almost appall the common beholder; yet here in Brasil the surrounding objects are so much in unison, and the eye so soon becomes accustomed to the general contour of the vegetation, that after perhaps the first inquiry of curiosity, it might very possibly receive no further notice.

Botanical Rarities. — On our second journey to the Organ mountains we observed an instance of what has been sometimes termed a Climbing Tree, from its having to support by clinging to that of a more sturdy neighbour. — We also

also observed a young Tree strangled as it were, by the net-work of a stout woody vine, which by this means had acquired strength enough to hold itself upright. — On the same excursion we saw the "Cipo d'imbé" or the roots of an Aroideous plant hanging down like long cords from the Tree-tops — Vines have been described as "resembling undulated ribbons"; we saw perhaps what was intended, in a woody stem which was compressed and the middle part permanently undulated. — An Arborescent Fern was found in the Organ mountains, the measure of whose trunk is recorded in journal; its height however was not in proportion to its extraordinary thickness, and did not exceed twelve feet. — An Arborescent Polygala, with the flowers purple & rather showy like some Cape Species, was not unfrequent along the Union road to the Prince; in one instance we found it nearly thirty feet in height, and the stem perhaps nine inches in diameter. — A Solanum approaching these dimensions, and having the fruit yellow and as large as an Egg-Plum, was observed on the hills at Tejuca. — A Fuchsia was observed in Sept. and flower on the Organ mountains though not hitherto published from this locality; Mr. B. found it in one instance with its woody stem six inches in diameter and over 20 feet in height. — A fine tree of the Bauhinia was observed by the road side (perhaps planted) near Praia Grande to S. Jose; in its habit somewhat resembling the Judas Tree, perhaps thirty feet in height with the stem two inches in thickness. — The Oxalideae or Wood Sorrels which in general are such humble plants, here are sometimes found to be shrubs; — We noticed one fifteen feet in height, with a diameter of half an inch. — The Melastomaceae are very generally shrubs, yet trees were occasionally seen of no inconsiderable dimensions, forty or fifty feet, and in one instance with the trunk two feet in thickness. — The Cedrela tribe were very generally shrubs; but some large leaved Species formed trees of Medium size. — The Bignonias it is well known in this climate form sometimes lofty trees; we saw none of the Arborescent species bearing pinnate flowers; in the only tree we had an opportunity of examining the flowers were yellow. — A Schizea was found in the swamps beyond Mugé, extending its weak, almost scandent stem at least thirty feet among the branches of the trees. — A true Papyrus apparently, was found on the same road, which is deserving of more particular attention. — A woody vine, with the foliage something like Viscum ( ) was very common

and perhaps might have been reckoned among the Epiphytes, as the stem where we examined, was disconnected from the ground; but it seemed rather to avoid the large trunks, being generally found rambling amongst the Shrubs, somewhat in the manner of the Dodder (Cuscuta). — The Araucaria so celebrated, grows to the height of perhaps 100 feet; and the Pine tribe, of which it is the sole representative, is easily recognised in its general appearance; yet there is at the same time a good deal of the "Contabile" in it for the leaves being mostly clustered at the ends of the branches. We saw only about twenty Stocks, and beyond the Organ Mountains; and tho' B. thought the inhabitants seemed to look upon these with a sort of respect. — The Compositae seemed comparatively rare; and those we met with were chiefly Shrubs, among which however a small tree was occasionally to be met with. — On the other hand, lofty trees were observed among the Aralieaceae, and possibly they may enter more largely into the composition of the forest than is suspected. — The Heliconiae is by no means an unfrequent plant. — The Calathea zebrina or "Velvet plant" of the Gardens, was once found by us, clearly in its native state, in the Woods at Tijuca. — Scandent Rubiaceae were seen by us, both rarely and but seldom; but Jacks Synopsis must be of great assistance. — The Vanilla, an example of a scandent Orchideous plant, was by no means rare, — and even this mode of growth is not entirely absent in the Palms, as is found in an inconspicuous Species ( ) whose fronds bear reflexed spines and whose extremities: the same plant I have also seen from Surinam. — The Clavija ornata described as forming such a remarkable object in the Botanic. probably does not exist in the district which came under our observation. —

Maritime Vegetation - On first visiting the Sands of the Sea Coast, the Stranger might be led to suppose that the Maritime Vegetation was but little varied — the creeping Stems of the Convolvulus pes-caprae and of perhaps two Species of Philoxerus often cover extensive tracts, but besides these he finds only here and there a scattered plant of Acicarpha spathulata, Sophora littoralis, Mollugo, a grass-leaved Philoxerus?, Borreria , while the grasses seem to be almost wanting, except occasionally the Rottboellia: — In all our excursions we were only able to add to the above a rank-growing Dolichos, the 1-flowered Convolvulus, the new succulent-leaved Polygala , and in 2 or 3 places the Guilandina. — But in the sands back of the Sea-beach, in situations which at least may be termed sub-

sub-maritime; the vegetation is at least as varied as decisive; commencing on the "downs" with the round-leaved brittle Calyptranthes? and the indeterminate plants, at first as it were close shorn and often not exceeding a foot in height; but by degrees assuming the form of insulated shrubs and small trees, from 12 to 20 feet in height, among which there is usually little to obstruct the traveller, in any direction. This low growth of woody plants is composed in great part of the Eugenia pedunculata and some other Myrtaceæ, one or more upright Banisteriæ, Clusiæ, ... &c: and more rarely Dodonæa once only seen a small leaved Myrtus?, Sapoteæ, Cocculoba - - - - - - but nowhere the C. uvifera, Coppanies, ... &c; — among which are seen some Cacteæ, and especially a Melocactus once only found; a dwarf shrubby Cassia rare; a yellow flowered Cuphea, also rare; a stemless Palm (. . . . .); some Bromeliæ; a prostrate purple Mimosa; - - - - - - - - - - and others, but in general the plants of humble growth were but thinly scattered over the sands. -

The steep rocky acclivities exposed to the sea, present a remarkable contrast in aspect from the vegetation of the Bromeliæ, the Cacti, the Euphorbiæ & the thick rigid foliage of the Clusiæ, and also a coriaceous leaved Pothos?, which plants predominate in such situations, sometimes almost to the exclusion of others. — This indeed, seemed to be the proper home of the Cacteæ, which we did not find away from the Coast (with the exception of the epiphytic Rhipsalides & Phyllocacti), even among the Organ Mountains where the rock is frequently exposed: in the open Country this tribe again makes its appearance, as A. St. Hilaire mentions them among the "Catinga woods" of that region. The species observed by us were a large Opuntia, 2 Columnares and one Creeping Cereus, which were sometimes also found among the sands of the Coast, as the Melocactus above-mentioned. — Among the crevices of the rocks a stemless Pothos? was not unfrequent, whose broad-lanceolate leaves were thick and perfectly rigid and from three to four feet in length - - - - - - - - - -; and along the Bay shore, the Malpighiæ Brasilienses, St. Hil., Ricinus . . . . . and at Piedade the Ximenia.

The Salt Marshes - presented sometimes a very striking resemblance to our own, considerable spaces being occupied with two species of Grasses about a foot in height. A Salicornia was very abundant, and also a Portulaceæ with small purple flowers; a Cyperus like Cyperus once seen; but the Statice was nowhere to be met with.

From the descriptions I had seen of the Mangroves (Rhizophoræ), growing

in the very waves of the Ocean" &c, I had been led to suppose that Flora had actually obtained a triumph over old Neptune, and in this instance had encroached on his domains, and in consequence was quite unprepared to find it only a [illegible] shrub! — I have yet to see a really arcuate tree, or indeed woody plant of any description. — The Rhizophora Mangle, and Laguncularia racemosa, often exclusively occupy extended tracts, forming miry swamps, sometimes even subject to the overflow of the tides; and among the others the Rhizophora in general may be distinguished by its whorls of naked roots, like the spokes of a wheel, sent down from the lower part of the trunk. Where the soil becomes a little dryer we usually observe a mixture of the Annona palustris and yellow flowered Canna. the whole forming a low forest, from 12 to 20 feet in height; or similar in its dimensions to that of the Submaritime Sands. — The Estrella estuary was situated in a district of this sort, but as we ascended gradually, assuming the Submaritime character, still however appearing in a great degree peculiar, and we regretted that we had not an opportunity of landing to examine it more particularly; — thus we observed from the boat, a Palm about 20 feet in height, scattered everywhere and apparently peculiar; large tufts of an Acrostichum like Aureum; a Typha — — — pretty common and whole fields of a White-flowered Crinum.

Extraordinary forms & Analogies. At the southern base of the Organ mountains we came upon a piece of Marshy ground, where the resemblance was remarked that both my friend B. and myself exclaimed "here we have a New Jersey swamp!" We found a Habenaria! closely resembling our hookeri, a Xyris, a true herbaceous Eupatorium!, an Osmunda! like regalis, a Rhinanthus?, Cuphea, - Sphagnum was mixed with the Gramineous plants, among which a Fuirena! and some Scirpeæ broke in upon the usual predominance of the Cyperi; two or three herbaceous! Melastomaceæ (the first we had then seen) took the place of our Rhexias, the Jussieuas replaced our Ludwigias, a Hedyotis was also present, and even the Sauvagesia did not seem very unlike some of our Sysimachias. The singularity of finding such a known growth in the midst of the surrounding vegetation cannot well be imagined without being witnessed. — On the other route we noticed a few traces of a similar instance, both at Manati's and near the head of the sea, as the presence of the Sphagnum, with, a Lycopodium like Caroliniannum, Eleocharis, Xyris &c,

and

and in the water Heteranthera and Utricularia, but nowhere else did we see such a combination of circumstances.

We understood that the highest point of the Organ Mountains there was a considerable change in in the Vegetation, the productions resembling those of temperate climates, as "Vaccinium, Viola," ..... &c. Those parts visited by us were not sufficiently elevated for any material change, though we were reminded of it by the presence of 2 Cuviceæ & a Goodyera, all however rare and as it were, lost among the surrounding plants. — In different parts of the Organ Mountains we also observed a Scutellaria?, a Fuchsia, an Alstroemeria, a tall-growing Rumex, Burmannia, a small-flowered Cereus at Marchi's, Sisyrinchium; and by the road-side beyond the Mountains, a Plantago like Virginica, Galium &c: Epilobium. ..... I should mention also a rather inconspicuous Umbelliferous plant (.....) abundant in one locality among the rocks of the coast. — A Rubus was everywhere common, seeming entirely out of place.

Aquatics. The aquatic vegetation was by no means so rich and varied, as that of the Land seemed to promise, being exceeded even by some parts of our own Country; nevertheless it could not be called deficient. While ascending the Estrella Estuary we were continually passing floating tufts of two species of Salvinia, and observed occasionally along the banks a large-flowered Pontederia, also the leaves of a Nymphæa? appearing like flowered at an indistinct view. — Near Magé we observed Nelumbium ..... and a rather showy Aquatic the officinalis of which I do not now remember ..... In pools and ditches the Heteranthera was abundant, and also the Azolla, and more rarely Lemna, Utriculariæ, the Lygina ..... &c. The Pistia did not fall under our observation.

Review of Families. The following observations have been written entirely from memory, without the opportunity of reviewing the specimens since they were collected. The list has however been submitted to Mr. B.'s inspection.

Ranunculaceæ. — [illegible] by me. Mr. B.ª procured a small sp. at Marchi's.ª

Dilleniaceæ. — We only remember a Woody Vine, something like Celastrus, not uncommon in fruit, but I did not see the flowers.
Davilla rugosa.

Rio Janeiro.

Magnoliaceæ. — 0. — none seen; — neither was the doubtful Magnoa of this vicinity, that we are aware of.

Anonaceæ. — Shrubs and small trees. Several species were met with occasionally, and one (a palustris) was quite abundant in the Mangrove Swamps.

Bottinia . . . . .

Anona palustris — vicinity of salt water.

. . . . . large fruit & flowers. a middling tree, planted on Corner of Bot. Garden road & Largo da Freiria

Xylopia?

Menispermaceæ — seemed quite rare — 3 or 4 species only seen, all vines.

Cissampelos?

. . .

. . .

Berberideæ. — 0.

Nymphaeaceæ. —

Nymphæa? . . blue flowered — Estrella river.

Papaveraceæ. — 0. — except the introduced Argemone, as a weed.

Fumariaceæ. — 0.

Cruciferæ. — 0 — none seen except some European weeds, introduced.

Capparideæ. — A purple-flowered Cleome was one of the most abundant plants, in open situations, especially in low grounds, subject to inundation, along the banks of rivers; otherwise the Family was not very conspicuous.

Crataeva . . . . . a handsome shrub, twice seen but no great distance from the coast. —

Capparis . . . . . Sub-maritime — not uncommon — Shrub. — "Low Corcovado" (B.)

Cleome . . . . . purple flr. — abundant in open places

Rio Janeiro.

Bixaceæ. — Bixa orellana was only once seen by us, in a hedge-row by the road side.

Cistaceæ — 0.

Violaceæ. — a true Viola was mentioned by Mr. Mawe as having been found on the Organ mountains, but was not seen by us. Plants of this Family were occasionally met with; but no Balsamineæ or Tropæolum.

Calyptrion ..... a woody vine - M. B. -

herbaceous, erect, 1-2 ft. - Common in woods, Tijuca & Organ Mts.

Sauvagesia .... 1 ft high - in the peculiar marsh above mentioned.

Droseraceæ. — 0.

Polygalaceæ — Securidaca, one shrubby species 2a 3' forming a woody vine - most of the Polygalas were low herbaceous, and one arborescent species — but in general the Family was not very conspicuous.

Securidaca .... Shrub.

.... Woody vine, with handsome foliage

Shrub in deep woods, large leaves - 2 ft high. -

Polygala ..... humble - resembling P. verticillata -

.... arborescent 20 ft large panicles fine. Tijuca & Organ mts.

corisioides, St. Hil - Succulent linear leaves, - Beaches in front of "Lagoa de Freitas".

Trigonia .... woody vine

? Tree - Organ Mts.

Caryophyllaceæ — Stellaria media; of course introduced, was found in the home-paths on Organ Mts. -

Molluyo ..... Sea-beach

Drymaria Cordata - was pretty common, but in general had rather the air of an introduced plant

Rio Janeiro.

Lineæ — 0.

Malvaceæ. With the exception of the Maritime Paritium and two or three Sidas which were abundant by road-sides and in all open spaces, this family was unexpectedly rare and appeared in no great variety, or beauty. —

Paritium . . . . . like tiliaceum — maritime —

Urena lobata — probably introduced. —

Sida . . . . . like rhombifolia — abundant, road sides & open places.

" . . . . . pot. combated — do — . . . . do —

" " "

Pavonia

Bombaceæ. — This fine family of plants is probably not rare, but the Species are mostly trees, and we were very rarely able to find either flowers or fruit — indeed, most of the plants we supposed to belong here were merely young stocks. — The Chorisia ventricosa or remarkable for its large fusiform trunk, was not seen by us, and probably does not inhabit this district.

Helicteres.

Chorisia Speciosa St. Hil. — Common about Rio, but not seen in Organ Mts.

Byttneriaceæ.

Waltheria. Common among the bushes by road side.

Tiliaceæ. — It is somewhat remarkable that we did not observe a single species of Corchorus, but one is described from this vicinity by A. St. Hilaire. —

Apeiba . . . . . only in gardens
Triumfetta . . . . . Common —
Luehea . . . . . a Tree — on Corcovado. —
Muntingia . . . . . "Light-wood" — cultivated at Mr. Gardner's, from Northward.

Terebrantiaceæ.

Rio Janeiro.

Clusiaceæ

Heisteria . . . . . Praya Grand. - not so common -
Ximenia Americana? - Bay-Shore at Pindahi.

Aurantiaceæ. — 0. — None native, - several cultivated and some naturalized

Hypericaceæ.

Vismia . . . . . a small tree - common -
Hypericum . . . . . small herbaceous - beyond Organ Mts. - road side.
. . . . . do.

Marcgraviaceæ. — The only species observed was a Shrub of 12 ft. viz.

Norantea . . . . . marsh on road to Mandi's Inn front of Lagoa de Petrinaya.

Guttiferæ. These five tries on the whole were rather rare, excepting the Coast-species. —

— We are at a loss to discover why any of them have been termed "pumicilia".
Clusia alba? - maritime and abundant - 12 to 20 ft. high - flowers white. —
. . . . . Organ Mts. &c
. . . . . Small-leaved, with flowers dull purple — a small tree near Mandi (alt. 3100 ft)

Erythroxyleæ

Erythroxylon . . .

Malpighiaceæ. These were common woody vines; but sometimes shrubs and one genus (Stigmaphyllon) was entirely herbaceous, with something of the habit of vicia. Through most of the year were observed, the flowers were universally yellow and appeared to differ little, except in size. We did not however meet with any true Malpighia, or any species having "horned" fruit or stinging hairs

Banisteria
. . . . . .
. . . . . .
. . . . . .
. . . . . .

Stigmaphyllon . . . . . a very tall shrub, 12 ft. - Submaritime.
Heteropteris . . . . . herbaceous vine - rocky near Coast.
. . . . . ? Fl. imperfect - pulse.
. . . . . .

Tetrapteris . . . . . Common.

Sapindaceæ. . . . The Paullinieæ were also common woody vines, ornamental sometimes from their foliage, but the flowers inconspicuous. —

Cardiospermum.
Urvillea - rufescens. St. Hil. - hedges
Paullinia
. . . .

Rio Janeiro.

.....
....
...
.....

Sapindus . . . . . Common Shrub
Cupania
...
Godonica . . . . . Woods near Coast – one only seen

. *Meliaceæ*. Shrubs or trees, often of the largest size. These fine plants were by no means rare, judging from the fallen flowers one often met with in the forests; and observed also in considerable variety. – The flowers in the species observed were uniformly white; or at most with a tinge of greenish. –

Trichilia elegans, St. H. . . An Ornamental Shrub – Organ Mts.
....
.....
Guarea . . . . . Large tree – not uncommon
. . . . . Tijuca.
. . . . . .
Cedrela Brasiliensis. St H.?
. . . . . trifoliate woody vine in shady places – fruit elongate 4 valved – Mundo's

Ampelideæ. – Species of Vitis were occasionally met with, but were a good deal neglected in collecting, and on the whole were less common than was anticipated. – Woody vines, but some inclining to herbaceous. – The *C. quinquefolia* was often seen having the face of a rigid upright shrub, 4 or 5 feet high perhaps young – The sanguineous peduncles of some were rather conspicuous. –

Cissus quinquefolia, Sims –
. . .
. . .
. . . .
. . . .
. . .

Geraniaceæ. – O. – None native

Caulideæ. . pretty common and [illegible] forming small shrub. – rare of the [illegible] species occ. – The Bat-wing form species were the most abundant. –

Caulis fruticosa – upright with foliac. petioles – near the City, Nov. 13.
. . . . *Confertissima*, St. H.? – Common beyond Organ Mts.
. . . . . Shrub 5 ft. & ½ inch diam. – Woods near Cattle
. . . . *arborea*. Joints flat. – round sides frequent. –
. . . . . Small yellow, like conniventia – round sides beyond Organ Mts.

Rio Janeiro.

Zygophyllece

Tribulus . . . . . waste grounds. – perhaps introduced

Rutaceæ.

Almeidea . . . . . .

Ochnaceæ . – a Shrub occasionally found in the deep shady woods "matta virgem" of the

Organ Mountains – 5 to 8 feet high. .

Gomphia . . . . . higher up Organ Mts

Hippocrateaceæ. –

Calypso? . . . . . Sh – Organ Mts, but flow not seen.
Tonsteleu . . . . . Woody vine (apparently) attached to other shrubs, like Cuscuta – Common.

Celastraceæ. – none certainly recollected

Rhamnaceæ. – none recollected – not even Gouania.

Sapindeæ.

Cupania . . .

Anacardiaceæ.

Terebinthaceæ. – Shrubs and Trees – Appeared to be in great variety, entering largely into the composition of the forest; but the genera in great part were unknown to me. – One of the prevailing families; and the leaves mostly pinnate. .

Anacardium occidentale – only seen in cultivated state.
Rhus . . . . . like our coriaria – mostly at Tijuca
Zanthoxylum . . . . . a large tree

Rio Janeiro.

Leguminosæ - Less abundant than was anticipated, but still forming one of the prevailing Families; the 4th in rank, according to our estimation. - The Mimoseæ especially were rare for a Tropical climate, at least the native Species, and their foliage was at once missed in the Forest. One of them was much planted for hedges; - and another, sometimes seen in gardens and called "Umbrella Tree", was highly ornamental, having its very large Compound leaves disposed at the ends of its few branches, so that the young trees had much the appearance of the arborescent Ferns. Hymenæa was not met with. -

Sophora littoralis. - - -	Sea beach
Crotalaria	fol. simple - flow. yellow. -
. . . . .	herbaceous. fol. 3 fol. - flow yellow
. . . . .	do do do -
. . . . .	do do do.
Indigofera	Shrub - 3 to 5 ft high - not uncommon to end of our journey.
Clitoria	Common - flow. blue & "Volute" -
. . .	
Galactia	rare
Dioclea . . .	
Stylosanthes	
Aeschynomene	marshes. - herbaceous. 2 - 4 ft
. . . . .	do.
Desmodium	
. . . . .	
. . . . .	
. . . . .	
Rhynchosia	
. . . . .	
. . . . .	
. . . . .	
Phaseolus . . .	prostrate vine on sands of coast - near Lagoa de Petengua.
. . . . .	
Dolichos	
. . . . .	pedunculi 4 feet long & upwards, hanging down among the branches
. . . . .	
. . . . .	
Erythrina	only young - terminal leaflet 18 inches long, besides the petiole!
. . . . .	
Phaseolus	a small tree with thick branches & showy purple flow - Tijuca &c.
Mimosa	a small tree. Busy shrub at Praya Grande
. . . . .	purple flo - prostrate - herbaceous - submaritime sands - Common -
. . . . .	
Inga	Large tree - white flo. - Organ Mts.
. . . . .	
. . . . .	
Acacia	
. . . . .	
. . . . .	"Umbrella Tree" - only in gardens

Arachis hypogea - only cultivated. -

Rio Janeiro

Geoffroya . . . . . large trees - Market of Jaylans - Lagoa de Peteringa - perhaps planted.
Sabandina bonduc . . . 2 or three places on Coast - rare -
Cocos alpinia . . . . . of Brasiliensis - a tall tree conspicuous in the forest, beyond Organ Mts. -
Poinciana pulcherrima - only in gardens
Cassia . . . . . small tree with rather - Conspicuous yellow flow. - Common on Corcovado.
. . . . . .
. . . . . small shrub - 1½ - Submaritime Sands - Lagoa de Peteringa.
. . . . .
. . . .
Bauhinia . . . . fol. long - acute
. . . . .
. . . . . small tree - common on road side, beyond Engenho Velho. -

Rosaceæ I was surprised at the absence of the Chrysobalaneæ - at least I was not aware that any were collected; and was constantly on the look-out for them. - Rubus . . was common everywhere, as it were "out of place" among the surrounding tropical forest plants. -
Cerasus . . . . . small tree - flow. inconspicuous - at Mauds
Rubus . . . . . common from tide - land to Mts. -

Mimoseæ . -

Combretaceæ. -
Laguncularia racemosa - maritime salt marshes. -
Terminalia !
. . . . . shrub - 4 spined below tuft of leaves

Vochysiaceæ
Vochysia . . . . . small tree. spikes of flow. white yellow - common on Corcovado.

Rhizophoraceæ
Rhizophora . . . . . salt - marshes -

Onagraceæ. - The fussieas were common in marshy grounds; mostly herbaceous, 2 to 5 ft; one white-flowered species observed
Fuchsia . . . . . Shrub on Organ Mts, sometimes a small tree
"Epilobium" . . . . found by Lt: B. -
Jussiæa . . . . . white flds - road to Mauds
. . . . .
. . . . .
. . . . .
. . . . .

Halorageæ

Rio Janeiro.

Lythraceæ

Cuphea . . . . . common

. . . . . do

. . . . . beyond organ Mts.

. . . Flava - submaritime sands - Lagoa de Petenings -

Melastomaceæ. - Under the present condition of the Country this seems the predominant Family - probably it was less so prior to the removal of the forests, as the species are mostly shrubs and fond of exposure to the sun as well as the moisture. - Wet places indeed are generally filled with them, and the large purple flowers of some species are conspicuous in such situations; and are sometimes known under the false name of "Rhododendrons". - Probably not less than 20 species exist within 3 miles of Rio Janeiro, which may possibly prove the head-quarters of the tribe. - Some formed trees even exceeding the medicinal size, while herbaceous species are not wanting. We saw one with yellow flowers, but only purple, rose & lilac. Sometimes inclining to blue, or rose-coloured, and even entirely white. The berries of some were edible, though rather insipid, but also agreeable as at once the only thing in the shape of a berry to be met with. -

Rio Janeiro

Myrtaceæ. Exceedingly abundant in every part of the forest, and much more frequently forming trees than the Melastomaceæ; — entering apparently largely into the composition of the forest, for many of the loftiest trees, as well as we could judge from the leaves, belonged to this family — exclusive too of the Anonaceous genera. —

Bidenne pyriformis . . . besides cult., occurred everywhere, even in wild situations & this on the Serra Tijuca.
. . . . . guerba-st Tijuca. — Baldwinia olim falsely "from Florida."
. . . . . shrub - bears fr. very like.

Myrtus . . . . . small leaved - 12 ft — subumbellate sands. —
. . . . . leaves small — all oblique in the same plane. — Ovary 3-celled.

Rio Janeiro

Myrcia

Calyptranthes

Eugenia

Gustavia?
Lecythis

Rio Janeiro.

Passifloreæ. on the Shore found apparently quite common and the species pretty numerous but among the Brazilian vegetation they are by no means so conspicuous as might be supposed, and Mr. Bennett is apt to neglect them.

Passiflora.
. . .
. . .
. . .

Loaseæ. -

Mentzelia . . . occasionally met with. -

Turneraceæ

Turnera . . . . . Common
. . . .

Portulaceæ.

Talinum patens - Common about Rio. -
Portulaca . . . . . Small purple flow. small mostly
. . . . . "petiolis, ovatis" B. -

Crassulaceæ. only the Kalanchoe; which indeed seemed at home with the succulent vegetation

Kalanchoe Brasiliensis, H. H. - roots near Bay above Common -

Vacciniæ. -

Cactæ. The finest species, only seen on Coast, and the Parasitic, only in forest & on rocks. -
The variety was less than expected. -
Melocactus . . . . buried to crown of flowers in subumbellate semb. - Lagoa de Maricanga.
Cereus . . . . . columnar - Coast - common. -
. . . . . do - rocks near Coast Lagoa de Rodrigo &c. -
. . . . . Scandent stem 4 angular - coast common
. . . . . - do - "stems triangular" M. B. -
Epiphyllum . . . epiphytic on trunks and roots of trees in forest
. . . . .
Opuntia . . . . rocks near coast -
. . .
Pereskia . . . . Pervasive in hedges & perhaps not native on the region - on trees & dry.
Rhipsalis . . . . Common on trees - dependent -
. . . . . Pervasive & copious on
. . . . . rocks - Lagoa de Freitas. -

Rio Janeiro.

Cunoniaceæ

Belangera speciosa. M. H. — a tree, not uncommon. Fructification & Organs nobl.

Saxifrageæ — 0.

Umbelliferæ. —

Hydrocotyle . . . . . rather an erect - apparently native

Aralieæ. — perhaps entering in no inconsiderable degree into the composition of the Forest: for we observed large trees belonging to this family. —

Loranthaceæ. — much less frequent than we anticipated, by no means sufficiently so to form prominent objects in the vegetation. —

Viscum
. . . . . top of Organ nobl
. . . . . do alternate leaves.
Loranthus . . . . flow red & showy - we usually met with.

Caprifoliaceæ. —

Rubiaceæ. — hardly less abundant than the Melastomaceæ, and much more varied in forms — constituting perhaps the prevailing Shrubs of the forest; and the low herbaceous species were abundant in dry open grounds. Once only a tree of medium size was observed (Genipa), which bore the fruit so large that it was at first mistaken for one of the Gutiferæ. There was considerable variety in the colour of the flowers, although the more general hue was white, and some formed quite ornamental plants. — A young plant with opposite lanceolate leaves, 8 inches long and the intermediate stipules of this tribe, was found on the route to Lagoa de Jacuringa, which if it does not belong here, I know not where else to refer it. — Hamelia patens was not met with. —

Manettia . . . . . herbaceous vine
Genipa . . . . . tree 80 ft - Organ nobl. one only
Gardenia? . . . . . fragrant - shrub - tube of Corol very long, slender, & Segments semewhat Contorted - 2 or 3 localities.
Coccocypselum . . . . . low herb - beyond Organ nobl. - berries blue.
. . . . .
Hedyotis . . . . . humble herbaceous plant - in wet grounds, among grasses.
. . . . . do —
. . . . . do —
Sabicea . . . . . decumbent shrub. —
Morenda . . . . .
Guettarda . . . . . fol. reticulate
. . . . .
Chiococca . . . . . pretty shrub
Tocoyena . . . . .

Rio Janeiro.

Psychotria
. . . .
. . .
. . . .
. . . .
. . . .
. . .

Pulicouria . . . Common - perfume sanguineous - smooth - common
. . . . .
Cephaelis . . . . . about 3 to 5 ft. - not uncommon - deep woods -
Borreria . . . . .
. . . . Sands of coast.
. . . .
. . . .
. . . .

Spermacoce
Diodia . . . . . wet grounds and banks of streams
. . . .
Richardsonia . . . . . common low broad leaved -
. . . .
. . . .
Etostemma
Linnaeus?
. . . . ? . . . . . Calyx & Corolla long, tubular, & both blue - ~~ornamental~~ - ~~white~~ - ~~Does Cattle~~ ~~eat it~~ ~~woods~~
. Calyx spreading at summit, persistent, purple - capsule long, blue? flow. yellow - in woods - Common -
. . . .
. . . . . Leaves lanceolate leaves - above mentioned -
. . . . a large upright shrub. 20 ft. with a few vertical branches - leaves near 3 feet long - flow inconspicuous.
. . . .
. . . .
. . . .

Galium . . . . . small sp. - dry banks by road - Side
Rubia . . . . . Surgeons Mts 2 B.:

Valerianeæ. - 0

Dipsaceæ. 0.

Rio Janeiro.

Calycereæ

Acicarpha spathulata. — Common on sands of Coast

Compositæ. — are perhaps less numerous in proportion than in any other part of the Globe? — and we have estimated it only the 11th among the prevailing families. — In general, like most of the Tropical species, they were far from ornamental. The majority were herbaceous, but many formed shrubs and even small trees. — No Chicoraceæ, nor perhaps true Cynareæ, were observed; and the Helianthieæ seemed to be almost wanting. I do not remember any Senecio or Gnaphalium

Helicocome? . . . . . woody vine capit. large, axillary - 2 or 3 localities. -
Vernonia . . . . . cymose senile flor, common in hedges &c.
. . . . .
. . . . .

Albertinia . . . . . downy scales to involucre — small tree.
Elephantopus . . . . . Common in dry open places
Elephantoides
Eupatorium
Eupatorium . . . . . like some N. Am. — Marsh at base Organ Mts - Estrada road
. . . . .
. . . . .
. . . . .
. . . . .
. . . . .

Alibertiniæ . . . . . seen occasionally. -
. . . . .

Erigeron . . . . . resembling Canadense, but lower leaves pinnatifid - a common weed -
. . . . .

Baccharis . . . . . Shrub 4 to 6 ft. -
. . . . . do
. . . . .
. . . . . Stem 6 ft - triangular. Organ Mts. Pedro Dias.
. . . . . Common stout herbaceous, 6 to 12 ft high. — section of stem has stellate cavity

Pluchea
Plerocaulon
Eclipta . . . . . Common -
Acanthospermum xanthioides - a common weed in coffee plantations.
Ambrosia . . . . . margin of Lagoa de Petaninga. —
Bidens . . . . . of 3 pinnate - Common in cult. grounds
Spilanthes . . . . .
. . . . .
Porophyllum . . . . . base of Corcovado
. . . . .
. . . . .

Yligia . . . . . Botanic garden

Rio Janeiro

Matisia . . . . . arcate herbaceous plant with something habit of Lathyrus.
Lavia . . . . . common

Campanulaceæ. — We did not observe any native Campanula — and the Lobelias were quite rare. — One of the latter had its herbaceous stem sometimes 10 feet in height by an inch in diameter! and the spike of crowded flowers 3 or 4 feet in length. —

Lobelia . . . . . the above species. leaves lanceolate, 3 or 4 long — a [illegible] stem, [illegible]
. . . . . exhibiting large flowers
. . . . .
. . . . .

Gesneraceæ. — Four fine plants were found in considerable variety, but so rare could they be called common. They were uniformly herbaceous, with thick stems and rugose leaves and large tuberous roots. The flowers were generally red, but sometimes greenish or yellowish. Several were found only on rocks. —

Gloxinia . . . . . red flor. "near coast" M.B. —
Gesneria bulbosa . . top of Corcovado.

Ericaceæ. O. a Gaylussacia was said to be found on the Coast to the Eastward; and [illegible] at the highest point of the Organ Mts. — but none of this family seen by us. —

Primulaceæ. — a blue flowered Anagallis about the city, probably introduced
Samolus . . . . .

Ardisiaceæ. — We met with a few shrubs apparently belonging to this family. —
Ardisia? . . . . shrub 10 ft. round to trunk?

Sapotaceæ. — are probably in fair proportion among the forest trees, for we frequently found their seeds. — Shrubs were also observed — but we did not find any in flower or fruit.
. . . . .
. . . . .
. . . . . shrub, low. — Submaritime sands — Lagoa de Piratininga. —

Rio Janeiro.

Ebenaceæ

Styrax . . . . . Shrub, 15 ft. – once beyond Organ Mts. –

Oleaceæ

Jasminum . . . . . white-flowered – apparently native. –

Apocyneæ . . rare for a tropical climate. — We hardly remember more than two instances of native Asclepiæ. No arborescent species were met with, nor any Plumerias

Asclepias curassavica – Common, & hard habit of an introduced plant.
Pedilanthus . . . . .
Cynanchum? . . . . . small herbaceous vine
. . . . . like Lespuriana of Florida & almost – Organ Mts at Estrella pass
. . . . .
. . . .

Cuscuta Sprengeri? on a plant closely resembling. Organ Mts, by horse-path leading to Imandis with Sibiatic.
Nerium . . . . . a fine white fld. species. 12 ft – at end of our journey.
Francisca . . . . . Shrub. – blue flo. –
. . . .
Vinca rosea . . . . . introduced & only one seen.
Echites
. . . .
. . . .
. . . . . flo. – large yellow
. . . . . flo. dark red
. . . . . flo – white.

Gentianeæ. –

Spigelia anthelmia – low herb. – met grounds on Organ Mts. – Estrella pass.
Lisianthus. herb 5 to 8 feet high – Organ Mts. at Estrella pass. –

Bignoniaceæ — These splendid plants were conspicuous everywhere, in great variety, and would afford a fine subject for a treatise; for but little idea of their beauty can be got from the dried specimens. They were mostly woody Vines, but we saw some trees; and they are well known to enter freely into the composition of the Forest. — The flowers were purple, sometimes white but most generally yellow. –

Mendoxia . . . . herbaceous vine – Common —
. . . . . more rare.

Begonia . . . . . one soft, large yellow flowers.
. . . . . vine - large white flow. -
. . . . . vine - flow purple, rather small -
. . . . . do - large yellow flow. -

Convolvulaceæ. Unexpectedly rare and formed no important feature in the vegetation, — in which respect there seems a strong contrast with Tropical Africa.

Cuscuta . . . . . Seen among some low plants by road-side, no doubt introduced.
Dichondra . . . . .
Evolvulus
.

Convolvulus pes-capræ! — abundant; spreading over the maritime sands.
. . . . . single-flowered - almost stemless. maritime sands.
. . . . . small blue flow.

Polemoniaceæ. 0. -

Hydrophyllaceæ. 0. -

Cordiaceæ. By no means rare. — mostly shrubs, sometimes scandent, or small trees. a Varronia was one of the most abundant shrubs in open places, near the sea-coast &c - I do not remember any native Cordia. -

Varronia . . . . . shrub 3 or 4 ft high, abundant. -
Tournefortia . . . . . scandent shrub. -

a small tree with linear leaves & purple

Boraginaceæ. - seemed almost wanting; except a Tiaridium pretty common and perhaps native; & Heliotropium Europæum, naturalized. -

Tiaridium . . . . .

Rio Janeiro.

Hydrolaceae. –

Labiatae – Expected to be wanting in a Tropical climate, or nearly so, but we found
ba 8 species unquestionably native. Salvia Splendens was found at Tijuca, in perhaps a na
-tive situation, growing by the banks of a streamlet, just below the Plantation of [illegible]; one
plant was 5 or 6 feet in height with a wide spreading top, but preserved its quadrangular herbaceous
stem, although 2/3d of an inch diameter at base.

Ocymum	Organ Mts.
Pelt odon radicans?	Organ Mts, common. –
Hyptis . . .	Capitulate sp. common by road sides &c. –
. . . . Spicata?	road sides near City. –
Salvia Splendens	Tijuca.
. . . . .	Scarlet flor. – beyond Organ Mts.
. . . . .	do
. . . . .	do
Scutellaria	Organ Mts. near Mauritia's –
Leonurus Turkuricus?	common weed in Cult. grounds – introduced.
Leonotis nepetifolia . . .	waste grounds within City. – introduced.

Verbenaceae. Must be considered among the prevailing families from the abundance
of the Lantanas, more especially in the immediate vicinity of Rio; mostly shrubs from 6 to 12 feet in
height, with Orange, White, or purple flowers. – A Stachytarpheta was perhaps the most abundant
weed in waste places &c. – Possibly some of the larger Forest-trees may belong to this Family? – We
did not see the Duranta, nor any species of Citharexylum or Vitex.

Stachytarpheta	several species, abundant. –
Verbena	f Bonariensis – hedges – perhaps introduced. –
Lantana	flor – orange
. . . .	
. . . .	
. . . .	
. . . . .	flor. purple
. . . . .	flor. white
	herbaceous – near Sea Coast.

Clerondendron fragrans – an abundant weed in waste grounds, taking place of our Stramonium & smells [illegible] – introduced

Pasmaceae. – of course rare within the Tropicks, the Scoparia & Hyptis excepted. – The Carica
species appeared to be wanting. –

Rhinanthus?	
Scoparia	marsh at foot of Organ Mts. Estrella route.
Gratiola	Common
Buddleia?	
. . . . .	

Rio Janeiro

Gratiola . . . . or Limnonia

Herpestis .

Acanthaceæ . Universally & everywhere in the Empire. - Only 2 or 3 species observed on the west-coast-route. -

Justicia . . . . . yellow flowers in various places -

Bignonial spike yellow flowers & organ tube & crenate.

Lentibularieæ. -

Utricularia . . . . . yellow - road to Inaché
purple - at Inaché

Solanaceæ . — Abundant & varied, especially the species of Solanum; which in general are rank growing herbaceous plants (but several shrubby & one forming a small tree), and the flowers are often showy. Other plants of this family are highly ornamental and are cultivated on account of their fragrance.

Cestrum . . . . . about 8 to 12 ft. high, - fasciculate stems - very abundant beyond Cayas Inte &c.

Solandra grandiflora - banks of Rio Peabunha, at end of journey - decided native - shrub, fascic. stems, 10 ft.
viridiflora . . - shrub - once at Lagoa de Freitas. -
imitata for white & fragrant ornamental shrub - common -
[illegible] for white & fragrant flowers in various places.
shrub - often cultivated leaves & white flowers ornamental.

Nicotiana tabacum - naturalized about houses
Brugmansia . do do
Datura . . . do - do -
Physalis . . . waste grounds
Capsicum .

[illegible] . . . tree in top of Mte at Tijuca - 25 ft by 7 inches diameter - fruit yellow - one foot long
shrub, with very thick "pubescent" branches - beyond organ mts.
leaves purple flow.

Rio Janeiro

. .
. . . .
. .
. . . .
. . . .
. .
. . .

Crescentia . . only seen planted
Carica papaya – only cultivated – 2 variety with pedunculate fruit, considered necessary to plant in proximity.

Nyctaginece. – The Pisonias were pretty common shrubs, and in some variety, but all had smooth fruit, and the leaves also smooth & tender; – they are cultivated for their foliage in European green houses.

Pisonia
. . . .
. . . .

Bierhavia . . not very common
Mirabilis . . introduced. –

Plumbaginece. – 4 genera 10 species of Natives.
Plumbago . . . . . fruit very viscous – near the bay shore

Plantaginece
Plantago . . . like Virginica road sides beyond Organ Mts.

Amaranthaceae. – in general rather scarce.
Philoxerus . . . . . sparingly over maritime sands
. . . . . do – do. –
. . . . . ! . . . road. – grass land. –

Chamissoa
. . . . . .

Chenopodiaceae – Appeared to be wanting, except the Salicornia, and various Chenopodiums, introduced weeds about towns. –
Salicornia . . . . . salt marshes – abundant.

Phytolaccaceae
Rivina . . . . . on the bay shore – Praya Grande –
Phytolacca . . . . . burnt lands – "common," D. –

Polygonaceae. Triplaris was not seen – neither was Coccoloba native. –
Rumex . . . . . very little herbaceous Polygonum of Sloanea beyond Organ Mts.
Coccoloba . . . . . inconspicuous shrub on submaritime sands

Lauraceae – uncommonly rare.
Laurus . . . . low of medium size – once at Tijuca. –
. .

Proteaceae . 0.
Thymelaeaceae – 0.
Santalaceae

Rio Janeiro.

Elaeocarpaceæ. 0.

Dilleniaceæ. — very peculiarly rare — and only two species obtained. (Curatella Americana), and both evergreens

Aristolochia labiosa — only seen on rocks to the hills, was quite common — flowers small flowers rare —

Euphorbiaceæ. — must be counted among the prevailing families, from the number and size of the trees that flourish in most parts of the country. The species of the order were chiefly shrubs but some formed trees of medium size; and probably several genera are at present included in the Genus but most of the Brazilian species formed congeneric and more or less "Amaranthiform" — Jatropha manihot was also cultivated — Jatropha curcas, planted in hedges is evidently naturalized.

Phyllanthus — fine shrub — 6 ft. — with small leaves — beyond Engenho Velho. herbaceous

Calycanthea — herbaceous

Sagina — herbaceous

Jatropha — small fl. herbaceous

Croton — spreading tree — large leaves — fl. small & yellowish — beyond Engenho Velho

Urticaceæ — on the Rio Grand were extremely varied and one of the most dominant families, everywhere entering largely into the Composition of the Vegetation — the Urticeæ were not abundant — and Sloanea chrysophylla was beyond the Engenho Velho, and were usually large shrubs; no herbaceous flowers here noticed. The Figs (Ficus) were remarkably numerous for America; all were trees and several of the largest size. The Cecropia were one of the most conspicuous objects in the forest, as well as most characteristic. The Cecropia were very, only found in the deepest shade, and where moisture was most abundant, as by the side of streams or springs, &c. — The species of Celtis, or plants related to were common, forming shrubs or small trees —

Urticeæ — leaves coarsely dentate — stinging

Rio Janeiro.

Celtis

Ficus — "broad punctations" at base of stem – Organ Mts. Corcovado & Tijuca – lofty tree.
large tree, spreading horizontally to a great distance – Gustav Corrêa
fruit sessile – 20 ft submarine sands.

Cecropia — fruit like fig of same sort as like Dorstenia – small tree submaritime sands, Lagoa de Jacarepaguá.
fruit sessile
fruit on stout pedicels – perhaps a 2nd sp. but leaves not studied –

Dorstenia — leaves hirsute, extremely large – Organ Mts – more numerous – young plant
Organ Mts.

Piperaceæ — referred by Gaudichaud to Urticeæ. — This was also a prevailing family, and we have estimated it the 13th – The Peperi were common shrubs in cool shady, silvestral, sometimes 12 or 15 feet in height, – and these seemed to be some allied Genera. – The Peperomias were mostly epiphytic, but sometimes found on rocks, and in general were tender herbs, and mostly succulent. – The stems of the Peperi were evidently "Exogynous", from the woody vertii (few and coarse) and distinct bark, but there were no "concentric rings" of growth. –

Piper

large "acrid" leaves and very long spikes – Common. –

Shrub in woods

Rio Janeiro.

Peperomia . . . . .
. . . . . thick fleshy red. a . leaves . rots, near Const.
. . . . . leaves edible - Rio Peculiar a on roots.
. .
. . . .
. . .

Athrosperma. -

Amentaceæ. - 0.

Coniferæ. - The Araucaria, is sometimes seen (perhaps planted) about houses, in the neighbourhood of the city, but we found some stately ones in the Organ Mts. unquestionably in their native situations. - It was by no means a common plant. -

Araucaria . . . . .

Cycadeæ. - 0. - none met with! -

Hydrocharideæ. -

Alismaceæ. - a Sagittaria ours pretty common in wet places one round to Maricas, with a remarkable habit (the effect of climate perhaps), tall, the lower branches long; terminated by stems; and perhaps also the lower leaves?
Sagittaria . . . . . round to Maricas

Juncagineæ. -

Commelineæ. - very abundant, and apparently in considerable variety, but they were neglected.
Dichorisandra thyrsiflora - an Ornamental and Conspicuous plant - common in various places. -
Tradescantia?
. . . . . ! fuscata. - pl bicolor - low plant dry woods
Commelina
. . . .
. . . .
. . . .
. . . .
. . . .

Rio Janeiro.

Pontederiaceæ.

Heteranthera	Like H. Amer. sp.	Common in ponds
Pontederia	Estrada river Ve.	common.
	perhaps a P. with smaller flo.	

Scitamineæ. — appeared to be in fair proportion; mostly found in moist situations,

near the water's edge. [illegible] most showy plants.

Costus	Stem.	Common in forest.
	do.	à P. Grande H. D.
Calathea Zebrina	woods at Tijuca	decidedly native
Maranta [illegible]	roots near Cast.	
	leaf & stem at Tijuca	

Musaceæ. — The only [illegible] Heliconia resembling [illegible] from the fern-

like bract, and not uncommon in the same situations as the former.

Heliconia .....

Orchideæ. — could not be called common plants any where, notwithstanding

the variety. It was several days before we met with any of the Epiphytic species, and only on the Organ Mts. did we find them numerous: notwithstanding the avidity with which these plants are sought for, a large proportion of them seem more curious than ornamental. — The Vanilla, an herbaceous vine, was the most common of the Family — The other terrestrial forms were few and scarce. —

Vanilla	[illegible]	[illegible]
Goodyera	Margins of leaves variegated	Inflorescence [illegible]
Habenaria	like hortensia	Among at bas. Organ Mts.
Epidendrum	Stem & new shoots	
	roots & bark	
	leaf	
Calanthe	D.	
Maxillaria	leaves on Organ Mts.	

Rio Janeiro.

Cucidium
. . . . . yellow & showy - swamps on road to Mandi
. . . .
. . . .

"*Cyrtopodium*" . . . . M. B.
Eulophia . . . . Large purple & red cup shaped flowers, abundant in the swamps on road to Mandi

Iridece - scarce: - and would seem to belong more properly to Temperate climates.

Sisyrinchium . . . . Equal both our Plants
. . . . . Do do Flowers pale yellow
. . . . .

Marica? . . . . top of Tubers at Tijuca

Hypoxideæ

Hypoxis . . . . resembling our common, but less conspicuous & lower - Common

Hæmodoraceæ . c. -

Amaryllideæ - Unexpectedly rare, and probably are confined to the more wooded districts with the exception of the 2 Plants (Crinum & Amaryllis) seen the only ones met with, and the only true bulbous rooted plants

Crinum . . . . . wide spreading evening ones on the Submerse lines marshes of the Estrella river
. . . . . do - perhaps Jeffersoni - on the Rio Piabunha, a small species.
. . . . . Small coppery flow - Scott observed at Petrópolis, rare. -
Amaryllis? . . . . ? bulbs on hills, epiphytic? M. B.
. . . . . "do - do - 2° sp." M. B.

Asphodeleæ - c. - none recollected. - Qu? may not all the genuine bulbous rooted plants be united under one family?

Bromeliaceæ - The splendid tints of the Bromelias were in vast variety, and abundance, their striking forms and the brilliant tints of the Floral envelopes, rendering them prominent objects. Many dressed & grew indifferently on trees, on rocks, or on the ground often forming the prevailing undergrowth in the deepest & wettest woods, and again covering the exposed sunny rocks of the coast, or even when almost gigantic size, lifted up above the branches of trees. They would afford a fine subject for a Monographic work & both of the largest size would be required to do them justice. The flowers are chiefly red, yellow, rose-Coloured & blue, and the bracts or upper leaves are more or less coloured. Stirax of the most characteristic genera of Tropical America, and the Environs of Rio may justly be its head-quarters. - The Tillandsiæ seemed to grow exclusively on trees, and were in considerable variety, but by no means formed such conspicuous objects as the Bromelias. The Vismieæ, above mentioned was quite Common, and besides were often planted for hedges, beyond the Campo &c. - Aquifoliaceæ seemed to be entirely wanting. -

Rio Janeiro

Bromeliaceæ

Tillandsia

Piperaceæ

Piperaceæ

was found among the orgs

Aristolochiaceæ

Smilaceæ

siliensis (Cordilyne Tea) cultivated

Smilax.

Dioscoreæ. — rare 2 or 3 species of these but

Dioscorea

Melanthaceæ. 0.

Paleæ. Palms are reported to be in greater variety in Brazil than in

& Yatia, and we were therefore surprised to find them by no means

Forest, generally speaking. — Most of the species were

the height of the first and it was rarely that we saw a stem exceeding

The Nut we did not see. The flabellate form of leaf anywhere — all were pinnate. A and H.

only variation was the cocoid segments (as in Cocos), and the entire form which

present when young. — The fruit of 3 species was frequently seen in

value. — Most of these are contained in Martius's work, but the precise genera not now

ascertained

Rio Janeiro.

recollected. — One more specimen ( ) was examined, the rest - all being
just budded and covered with upturned spines. - The type of the vegetation was very frequently seen
- joint by an opuntia with a succulent pair of leaves, armed with Prickles and Bristles.

- Stemless - species of Dry point - and maritime Sands - not uncommon. -
- Stem short - but Erect - Sub maritime - what not frequent -
- Stem 20 feet - rather Slender - leaves somewhat dependent - Sub maritime Marshes of Estrella river. -

[illegible] and to [illegible] mar. Clay.
30 [illegible] united - in every direction, [illegible]
[illegible]
[illegible]
Simple; off. top of the Stem -
do - do - top point - upon
do - do - top rays - upon
Com. pinnate - sessile - upon -
Dry - leaves very large - with [illegible] - [illegible]
do - but [illegible] - woody - near Cattle. -

Naiadeæ - None recollected.

Gramineæ. - Visited - not seen. -

Aroideæ. entitled to be considered one of the prevailing families, from the abundance of the various species found upon the Granite Rocks. Their roots are very frequent in the Forest, twining about the base of the trees, or trailing upon the ground in their immediate vicinity. They were frequently met with in the Forest, their long cordate leaves being of a pleasant and enlivening green, in perfect contrast with the pure white of their flowers; which however were rather rare. Notwithstanding the unfavourable season of the Colonies, they would afford a fair subject for a monograph, for the variety of form, both in leaf and flower is very great; and but a faint idea of their appearance can be gathered from the miserable vestiges we see in Herbaria. There are however upright species, and one in particular with Sagittate leaves, common on the Sub maritime Sands as well as Dry upland. — Stemless forms were also frequent, both on the ground and Epiphytic, including several species with numerous dark-coloured Spathes, apparently congenic. — One of the stemless species found among the rocks of the coast, had its oblong - lanceolate leaves, very thick and perfectly rigid, from three to four feet in length. -

Dracontieæ;

Rio Janeiro.

Dracontium pertusum, so remarkable for its perforated leaves, as if eaten by insects, was seen [illegible] the Organ Mountains. The "Dedo d'Anta," so seen by us on the Organ Mountains 6 long coats hanging down among the bushes presents a bright [illegible] at Petropolis. This origin. suggested by the Botanist to the ends of the creeping stems.

Caladium

[illegible]

Pothos

[illegible] Stalk leaved of Coast flowers not seen - stemless
stemless - stalk cold. spathe -
do - do - very small - spiphyte -

Typhaceæ

Typha [illegible] seen Common in Sub: mountains of Estrella since found at Sepetiba [illegible]

Xyrideæ

Xyris [illegible] mountains among Sphagnum - rather rare -

Eriocauleæ. - None seen; but a fine one (E. Braziliense) found to exist along the Coast and

Restiaceæ &c.

Juncaceæ. almost wanting - only one of the Articulated species seen, and that not [illegible]

Cyperaceæ. - were perhaps more numerous in individuals than the Gramineæ but more formed large conspicuous objects, like the Bamboos &c. - The Cyperi formed the prevailing genus in fresh-water marshes often seeming to occupy them almost exclusively; and perhaps there was considerable variety, but the species were neglected by us. -

Rio Negro.

The width of the river (perhaps ⅓ third of a mile), and the quantity of water it carried, surprised me, considering that its chief supplies must probably be drawn from near its sources. Though not widening materially at its mouth, it is deep, and the current rapid and nearly of a uniform, a little of the flood (it was said) only covering it for about two hours. The water is fresh to its very mouth, except at the top of the tide — Along the immediate margin however, on either side, the water is brackish though still potable (at the Pilots house); but the shores for a mile or two from the mouth seem impregnated with salt. — On one occasion after crossing the Eastern Head I found the water perfectly good though perhaps a couple of miles at sea. —

The Rio Negro is said to be navigable, carrying six feet water, to Yaguari. From the Geological character of the Country, horizontal layers of pudding stone, one may conjecture that its course must be very winding; but this and other particulars relative to its upper parts are unknown to me. —

A venture in my excursions did I see springs or any trace of running water, except in the river itself. — The water shed path in the plain collects in shallow depressions and I found it often covering these, though only a few inches in depth.

As is usual in similar districts Salt Lakes are found; but none were visited by us. — One of considerable extent is said to exist about "7 leagues" from the Pilots House, which is marked extensively; the "Crust being about 3 inches thick & forming as fast as it is carried away." — "the ground appearing as if covered with snow." — A smaller one was stated to be about "12 miles distant on the opposite bank, and is not worked."

The middle channel between the Shoals, seems at present to be the only one that is useful for sea vessels — In going out we had as shoal less than 2½ fathoms water. From the report of the Pilots it appears "that the channel shifts and has varied one point since the Poles were set up, within 2 or 3 years. It also fills up after heavy freshets but generally "runs again in the course of three or four days". One of them had several years ago taken a small vessel through the Eastern channel, but did not now consider it practicable."

Opportunities for observation.

Jan. 26th 1839. — at anchor off the mouth of the Rio Negro. — This morning went on board the Schooner Pilgrim, fish in Company with Messrs. Dana, Peale, Holmes, Hale, Drayton, Fox, Courtenay, & Breckenridge; and we were three attempts found by Capt. Hatch, attempted the Western channel, but found it impracticable. — came up however with the "Sea Gull," which

last

and how to get to it. The previous evening, Capt. Wilkes by means of two guns pointed out to me the longitude and position of the entrance to the principal one Diff. — Two obstructions were also observed to cross from the bank, and a party of Americans were found living on the opposite bank of the river. — We were now transferred to the Sea Gull, and Capt. Wilkes after giving directions to take the middle channel &c., said to me in passing that the Pilot-fish would come with the mouth of the river in sight by evening and we could return to her.

A pilot coming off to us, the Sea Gull now stood for the middle channel, which was a short distance off; and after a good deal of difficulty and some danger, succeeded in getting through, — but not before signals of distress were made and assistance was at hand from the ships. It was dark when we came to anchor about a mile within the mouth of the river and a short distance below the Fish Town. We were visited from the town in English and boarded by them, the person stating that he could not come on board for the want of a boat. — After supper a party of us went on shore, armed to the teeth and reached the Fish town, which we found deserted though lights were burning. — We understood subsequently that armed men were concealed around, who might have picked us off with ease and much safety. After a time two persons made their appearance, one English and the other French, who invited us in, and from whom we learned that the Country was quiet and undisturbed by Factions at present &c. &c. — On returning to the boat, various plants &c. obtained in the bush gave promise of a fine harvest on the morrow.

Jan. 27th — Landed at 6 A.M. and after spending an hour in the vicinity of the house, directed our course up the river, along the route to the town, estimated by those who visited it at 18 miles distance. — We soon came to a Rancho, and in endeavouring to procure specimens of a Bromeliad, found ourselves brought up by a current running into which we must have been forced deeply by the reaction of water, without receiving any material accession from the adjoining upland. The opposite bank of the river is swampy as far as one can see, abounding and on behind the mouths of 2 or 3 larger inlets, probably of a similar character; for there is a road to town on the opposite bank. Such would hardly be the case were there any considerable branch to the river. — About 2 miles up passed the mouth of a stream; and further on, a dead tree which had drifted down with the current, 50 feet in height with a diameter of two feet and bearing all the marks of age; — also a bunch of a willow, which seemed a peculiar species. — The shore of the river is here very

very shelving, and gravelly, or rather composed in great part of small, polished as if "river worn" pebbles in great part reddish and porphyritic, strongly resembling except in their diminutive size, those at Nahant. Quartzose pebbles were in the same manner mixed with them, some semitransparent. —

The arrival of the Expedition-boat it seems excited some alarm in the Country, as we anticipated, we were taken for the French Squadron, which was at that time blockading Buenos Ayres. It was for this reason that a Pilot was not sent out to us, and the circumstance of the Schooner's forcing in a manner the passage in, by no means contributed to allay the alarm. — This morning we had seen a small party of armed horsemen (Guachos), and we now met a second. Like the others they were wrapped in the gaudy dress of the Country, the contrast of red and white [illegible] a showy appearance in the distance. The leader, a respectable looking man, past the middle age, turned by [illegible] us, but neither my friend B. nor myself were able to enter into conversation with him. He had however observed our avocations, which we took no pains to conceal, [illegible] heard the party remark, as he turned towards his companions, "Gente Colorado."

[illegible] by many [illegible] visitor is attracted to [illegible] the Pilot's [illegible] first [illegible] the main-land, about 4 miles from the Pilot's house, [illegible] a decently built Cabin, with the walls of stone and a thatched roof, containing among the rubbish a wooden piece of Ordnance. A cast-iron stove-plate was lying [illegible], bearing the stamp of some one's "patent, New York". In the face of the bluff we found a small Cave, apparently an artificial excavation, about 8 feet square and five feet in height; wearing every mark the appearance of having intended for a place of concealment in days of Indian warfare? — indeed, we were subsequently informed that "the inhabitants used formerly to live in caves." — It may seem, ridiculous, but I was here reminded of the marvellous story of the "Ancient Troglodytes dwelling in caves, along the upper Nile", and perhaps [illegible] was not so very unlike the Nile as might be imagined.

Indians still come in to this Country occasionally to steal horses. One of the Pilots had been in an engagement with them, and reported that [illegible] mounted having but a single weapon, a long pike; and charging in a body, with the cry of "Ha-Ha", so impetuously that they could break through any where; but afterwards they continue their course, and do not give further trouble." In reply to the question as to "whether there were any Indians in the Country remarkable for their size? he spoke of a race larger than the others, but who were

"were locked upon as great Cowards by the surrounding tribes."

Observing a house some distance above, and near it several large heaps of [illegible] of Lime, I pulled for the shore and proceeded to examine them. They proved to be Shell, obtained from the Salina in the Campos above mentioned. Carts for its transportation were lying near, and there was a kind of Oven in the neighbouring hills. — I was invited into the house where I found several "Gauchos", who received me politely and offered me a glass of "Aqua mirabilis", which it seems is a rare article in this Country! — They asked me a variety of questions about the Squadron, &c., which from what I knew of Latin & Italian I could comprehend better than explain myself. They seemed rather incredulous on my stating that there were not more than ten in the Squadron, and only 20 in the Schoonor which had come into the river; for it seems they had not entirely got rid of the idea of a French invasion. They were anxious to know what was the meaning of the firing the evening previous? with some difficulty I made them comprehend that it was for the purpose of ascertaining distances for a survey of the mouth of the river. It now seemed to be understood that we were "Americans of the North", and one of them remarked to me that we would "suffer no King in our Country to crown i.e., and seemed disposed to enter further into politics, but I was little able to converse with him. They understood that we were bound on a three years Cruise in the Pacific. They wished to know why I was gathering herbs, and whether it was for Medicines? — This being a Sunday was spent in our own Country. Surprised that it was pretty with it at first. — Soon was disturbed by the Alert of the party down to the shore, that we were on a "Voyage of Circumnavigation and for Historia Natural! &c. — A woman of respectable appearance, but with a tinge of the African, had been "a Naturalista" formerly at Buenos Ayres. — How much of this conversation was in consequence of the previous visit of Messrs. Ringold and Perry I am unable to say, though no doubt some part of it. —

Seeing nothing of Mr. Breckenridge, I now turned from the river and directed my course at once into the interior. As I proceeded the valleys became more shallow, more and more indistinct, till at the distance of a few miles the surface had become a perfect plain, and I found myself where I had long wished to be, in the midst of a "Prairie". — In many places there was a growth of verdant herbs though rarely so high as that the head and shoulders of a man walking would be plainly visible

visible. I soon experienced an effect which had been often mentioned in travelling over the "Steppes" viz., the difficulty in judging of size and distance. - I thought that a small tree in the distance, was of the size of a middling apple tree, and with great exertion, came up rather soon with a bush of the same height at the time, the former of which I had been steering at. - it was the first which had presented itself. Deflections observed similar ones, ranging in particular directions, no doubt indicated the best roads in crossing these plains. A large proportion of the ground we had travelled over, both land-hills & plains, had been burnt over; but as I was provided Carbonel stranded on inland bank. Split in with several loads of it. which was made with perhaps some reluctance to the weight of a tree or two. They feared to trespass the vicinity of the shallow parts of the Lagoon bank. - Perhaps it is in consequence of the keeping up of them, that the wild animals were at particular times, as is said to the sea-shore eastward of the river. Started a gang of the Patagonian Cavy, six in number, in single file and bringing in their gait, somewhat in the manner of the Hare-genus. Started also at different times several deer, some with short &c. &c.

I had intended to have struck the Sea-Coast beyond the Ribbit Town, but it was now getting late, and as usual I had neglected to take the accurate bearings of the river as Coast, - the further I proceeded the game became more plentiful, so getting as with regard and knowing that we were to come beyond the Ribbit I concluded it prudent to pass it although it had been evidently there distant. It lies in the direction of the bearing Ostin. The last had been exceedingly apparent in the "Campo", and I was to steer with most of a little of water, after being without from 10 a.m. to 7. P.m., was most welcome. I reached the house just before dark. -

Jan. 22d. - The night was spent rather uncomfortably as the house swarmed with flees. Mr. Hale arrived from town during the night, and brought word from Capt. Ringold that "the Schooner would not go up the river as was intended, but that he might stay to be ready to sail "by 9 a.m. and that the Lyondon would get to sea at noon". This was unexpected - as it was possible that some communication had been held with the Lyondon during our absence. We concluded to go down to the beach and make signals for a boat. - No boat was sent, although Capt. Ringold and party were taken on board from the opposite shore, neither did Messrs. Dana and Cuthbert, whom we knew to be on board, come out to us. In the meantime the "Beagle-Tribe", was observed to be under weigh, came up safely over the bar, and anchored at

at the mouth of the river. A boat came up from the "Flying-fish", owing as we afterwards understood, to the strength of the tide and current. Dr. Fox who had been on the beach from early in the morning till noon, about 10 o'clock, walked down to see and we subsequently found was taken on board. — We were encumbered with luggage and wished to be spared the walk but above all I was anxious to visit the opposite shore of the river, should time permit. Accordingly a boat coming off for some sheep (not yet arrived), Mr. Cl[illegible] got a boat and came of it to get on board the Sea-Gull, where we found Capt. Courtney and Dr. A and 2 mountains!, in consequence of an order left by Capt. Ringold "to let no one come on board or leave the vessel during his absence." — Capt. Ringold had been down to the "Flying-fish," and as I understood from him that Mr. [illegible] was expected on, we concluded to remain as we were. —

It being evident that the Schooner could not get off that P.M. Capt Ringold put us on the opposite shore, limiting our stay to "4 or 5 o'clock" It was now 2 p.m. and I was anxious to visit the perpendicular bluff, about 3 miles distant which, judging from the appearance in local circumstances we might probably find some productions not yet seen by us. We hastened to the bluff, and turned immediately back towards the vessel; — when within a mile, we met some sailors who had 1½ hours leave of absence, so we took the remainder of the way more leisurely. The poverty of the flora, compared with the Brazilian, was very manifest; for in all this walk of six miles we found but 5 plants, not seen the previous day, but we often thought we had seen all there was at a time. —

June 29th. — I did not leave the vessel this morning, although we did not sail till noon. — Got on board the Schooner the same afternoon. On getting a little better acquainted with the Country we found that there were several Americans and English residents here; and one need not go far to hear the English language spoken. — There was also no lack of the African race.

June 30th. — Went on shore at the point, in company with Rev. Mr. Elliott and Dr. Fox. Landed at 10 a.m. and our stay was limited to 3 p.m. — Took a turn along the sea-beach, where I found plenty of drift-wood, and afterwards struck off among the sand-hills. Started a couple of deer. — Having gone from the ship, returned to the boat, which I reached at 12 m. — A fog having risen to the South-East & W.E thought it prudent to return immediately; and it was well for the fog thickening, threw

of our boats did not reach us at all.-

Jan. 31st — A blow coming on from the South-East, the Squadron was ordered to put to sea; and in such haste that the Peacock and Porpoise slipt their anchors. Ascertained in the course of the day that our boats were all safe, with the exception of the mast however had been left on shore. Returned the same evening.-

Feb. 1st: — Capt. Wilkes being desirous of ascertaining the temperature of the cave before mentioned, and as no one had visited it but B. & myself, I volunteered to go in the boats which were sent after the missing men. A strong wind from Seaward was still blowing, and we found the river much higher than previously, the marshes being quite overflown.— Landed at noon at the Pilots house, and started immediately for the cave, where I spent 3/4 ths of an hour. On my way found a few Species of Amaryllis (or Habranthus) which had escaped our observation. Returning to the house, found Mr. North had procured several Armadillos and two young Ostriches, one of them living. The missing men were all found. The waters were now so high that I did not myself apprehend any difficulty in crossing the Head, although there was a strong head wind; but we found breakers on the outer edge, and for a few moments were in danger of being.— We got through safely, as well as the other boat, but after putting around to own found it impossible to reach the Vincennes.— The Peacock coming along, being under weigh in search of her Anchor, got on board, and reached the Vincennes near midnight.

Climate.

We neglected to procure any satisfactory informations respecting the Climate, which might easily have been done, from various residents.— The time of our visit corresponded to the last of July with us. The first two days I was on shore the weather was oppressively warm (which might have been the occasion of the S. East blow which followed.) — on my second visit it was more comfortable.— and the last time, with a strong cool wind from Seaward, the average temperature was about 73°.— Dr. Fox on the 30th Jan., found the temperature in a hole 3 feet deep in the Sand-hills, =74°.— I myself in 4 observations in the "Cave", one at the bottom of a horizontal hole (12 feet from the surface), two buried in the dry sand on the River, one buried in excavated sand, feeling damp and cold, found the temperature 70°.- This is probably still too high for the mean temperature of the year, but I should not be supposed if it were an approximation; considering the scarcity of rains, the

absence

absence of the shade of trees, the mildness of the winters — One individual had only seen "snow once in four years"; and when it does fall "it soon melts away". "Ice is hardly known", though frosts appear to be not unfrequent in the Winter. — The scarcely deciduous nature of most of the leaves is perhaps another proof of the mildness of the Winter? — On one occasion I observed a dry gully on the edge of the Campos, which proved that it rains heavily at times — The verdure of the annual plants being all past, and withered, at the time of our visit, is another proof that rains fall in the year — We also observed that the plants had their seasons, and it was not so easy to find them in fruit and flower at the same time as within the Tropics. — The inhabitants generally had a healthy appearance

Vegetation.

The Vegetation of the upland, everywhere wears the mark of being subject to intense and long continued drought. — The absence of low, the roots of the plants (generally compleat grass) looking entirely to the rain for their support from the driest months — the stunted appearance of the shrubs, branching from the base; their branches few, rigid and almost impenetrable, and very generally armed with spines; & furthermore rendered unsightly by the universal smallness of the leaves — in one Labiate plant they seemed more grouped scattered over its coarse blackish branches; — the texture of the leaves themselves often dry, coriaceous and hardly deciduous; — in fine the general aspect of the landscape which wears more of brown than Green; — every thing in fact denotes a set of Vegetables adapted to the circumstances; — either to endure, or to escape, drought.

The soil of the "Campos" was mostly a mixture of clay and small pebbles, destitute of vegetable mould, and in great part exposed, from the scattered Vegetation: Though dry, it was hard and firm, as if beaten down or rolled with a garden-roller. Among the Sand-hills it was loose and sandy, and the roots of the plants seemed to fasten more deeply. Though the Vegetation did not differ very strikingly (except in the annuals) from that of the Coast.

Scattered bushes were common almost everywhere, always growing isolated, and rarely exceeding eight feet in extreme height and the average perhaps scarcely three feet. I met with one instance of what might in a certain sense be termed a "tree", at least from the size of the trunk, which was a foot in diameter; but scarcely had it risen five inches above the surface before it separated into about 30 branches and in 6 height

longer it did not expand the others — so that it was rather an aggloneration of shrubs.

The general Colour of the "Campos" seemed to correspond very much with our pastures in November, in the same latitudes. A considerable portion of the soil was left bare by the scattered herbage, and the Grasses too were in great part withered, but what remained to contribute much to this absence of green, besides the paucity of foliage on the shrubs, was that very many species of plants were more or less hoary. A friend of mine said to me that "these plains were precisely like the Prairies of Arkansas, and that the plants were the same." — My friend is no botanist (for but few even of the Genera are the same) but the remark is valuable as illustrating the general aspect of the Vegetation.

Perhaps 9/10ths of the Vegetation was composed of Grasses and the Compositae. After these the Leguminosae were the most common, as well as the most conspicuous. The other Families took but an unimportant share, unless perhaps the Chenopodeae.

The Compositae appeared to afford many peculiar forms, some of which I had formerly seen from Buenos Ayres, and others were unknown to me. It is remarkable that some of them counterfeited the habit of the European Genistae and Ulex (ulex) so nearly, that the superficial observer might readily be deceived. — A common shrub, with short acicular and pungent leaves, and yellow capitate flowers, was almost the only substitute for the South African Helichrysums — Another common plant was entirely silvery white, and oblong leaves, and the petals ranging from white to a pale and very pretty crimson. The Graminae did not appear to present even there perhaps the peculiar forms. They in general appeared to have little of the nutritious quality of our better grasses, but were hard and dry, consisting chiefly of the genera, Stipa, Aristida, Cenchrus, Apogonia, Andropogon, Aristida, Elymus, Polypogon.

The Leguminosae appeared to afford 4 or 5 peculiar forms, and in general were fine plants. — No less than three Mimoseae! were observed among them.

The Chenopodeae also appeared to afford two peculiar forms. — This tribe however appeared to be more abundant in the vicinity of the coast than on the "Campos".

An Umbelliferous plant too with a compressed capsule, appeared to be peculiar; and by its dense tufted mode of growth, and rigid tri-spined leaves, appeared to simulate the surrounding shrubs.

On the other hand an Asclepias preserved its well-known habit of fine sigul leaves, as if regardless of the surrounding circumstances; in the same manner

with

as the A. gigantea at the Cape Verd Islands.—

The other families of Plants may afford in all perhaps a dozen peculiar forms; among which we may particularize the Mesembryocarpus, a Lycium? or perhaps a congener of solanum lycioides? — a fine Orchideous! plant, having the habit of Arethusa &c.

One of the most showy plants we met with, was a Portulacea, with large purple flowers, an Oenothera too, with large yellow flowers, was rather conspicuous.

We observed five species of Cacti, by no means conspicuous plants, but somewhat peculiar. — They seemed to be chiefly found at the margin of the Campos. — One Opuntia had the usual habit of the tribe; a second had ovoid articulations; and a third cylindrical ones. — A mamillaria? was so buried in the soil that the top was even with the surface, and it might readily be overlooked. — A rectangular Cereus was observed among the bush-hills, and was sometimes found agglomerated.

We found a fine species of Eryngium (or Hydrocotyle) among the bush with large white flowers tinged with pink; and on the Campos, a smaller one with the flowers red and yellow. — It is very possible that at a different season we might have found the Bulbous rooted plants more numerous.

As remarked before the Annuals were all past — We collected the Winter seeds of several, but it is probable that many may have escaped us. — We often found extensive patches completely covered with a bed of the crinkled pods of a Medicago.

Ferns appeared to be entirely absent, as at the Cape Verd islands; and I do not now remember to have seen any Mosses. A fine Lichen however was found adhering to the stems and branches of a shrub.

Banks of the river. Turning now to the river bank, we came upon a vegetation so strikingly in contrast with that of the Upland, that it seemed positively "out of place": — it is sufficient to mention Limosella, Tillaea, Azolla!, Hydrocotyle 2 sp., Lythrum, Cicuta?, Sisyrhynchium, Cunilicgulum? Eryngium 2 sp., Ipomoea, Samolus, Juncus, Scirpus,

&c. — Decaisnea fumosa appeared to be altogether wanting. — I have mentioned above Drift timber of large size. I did not ascertain how far it was to the commencement of the wooded Country; but the forest is in all probability confined to the immediate valley of the river for a long distance. No part of it came within our observation. — The same remark is in all probability

will

will apply Cultivation.

Maritime Vegetation. We did not visit any part of the Marsh high enough up the river to be entirely out of the influence of brackish water; through the presence of a Phragmites & Scirpus (like lacustris), Carex &c, evidently indicated a Swamp. A Arundo (perhaps a Donax.) was also conspicuous, from its silver-white panicles. — The proper Salt-marsh bore a very striking resemblance to our own in the same latitude; and was occupied by Suaeda, Statice 2 sp. like limonium, Uniola like spicata, Spartinas 2 sp. (one very much resembling glabra), Juncus like maritimus of Europe, a perennial Salicornia, Plantago like maritima, Triglochin?, Scirpus like triquetra, &c. — The sands of the coast afforded, as usual many plants which seem confined to such situations; but our stay was too limited to distinguish in all instances. We may specify a Psamma, or a grass having the same habit and mode of growth, a Uniola?, a woolly-flowered Panicum one of the Calycereae?, Heliotropium like curassavicum, several Chenopodea, Solidago, &c.

General remarks. Austral America is rather the most extensive of the three great Southern Centres of Vegetation; but though abounding in peculiar forms, its vegetation is tame compared with that of Southern Africa or Australia. — It is remarkable that of the proper Austral ones, none seem common to any two of these regions; that the reverse is strikingly obvious in the Australian parts of the Cape.

For some time after I had landed I could scarcely persuade myself that I was still in America, so strange were the appearance of things around me. It has been a subject of remark that the Vegetation of this Eastern coast resembled very considerably that of Europe — Observers may have been sometimes deceived by introduced plants, but the assertion is certainly not without foundation. — The Analogy even to the Southern Shores of the Mediterranean is striking, as instanced in the genera Gnaphalium?, Ephedra?, Cressa, Erodium, Avena, Trichodium, perhaps the proper Tropical Mimoseae, &c. &c.: — if to these we add (besides genera known to be natives of the Tropical Mimoseae, &c. &c.: — if to these we add (besides genera known to be natives of the Boreal forms not exclusively European, Chenopodium and the abundance of the Labiatae, Amaranthus, Senecio, Gnaphalium, Atriplex, Arenaria, Silene, Euphorbia, Urtica, Malva, Plantago, Juncus, Galium, Vicia, Agropyrum, &c. &c.

The case may seem pretty well made out. One further search however has convinced me that the true American character of the Flora is abundantly vindicated by the presence of Bromeliae, Aroideae, Cactaceae,

Baccharis, Ambrosia, Stevia, Solanum, Anothera, Unida, Cerdochloa, Apogonia, Aristida, Verbena, Zapania, Solidago, Bigelowia?, Gerardia, Sisyrinchium, Urtica, Gilia?, the Cacti,

Cultivation. The only sign of cultivation we met with was a young Aspi flooding in the river. The first farm we understood was about 12 miles up, and was owned by an American. Peaches were said to be raised near the town, and also Wheat. We examined some of the Cabbages that were brought on board, and found them coriaceous and strong. We presume that Cultivation is everywhere confined to the river-bottoms, or immediate Valley of the river. —

Introduced plants. Notwithstanding the absence of cultivation we met with some plants evidently of foreign Origin — for it seems it is sufficient for civilized man to set himself down any where for a certain set of plants to spring up around him. A stock of Xanthium spinosum we felt assured must have been brought from the United States, although it is not native with us. But besides the usual weeds, there are some plants now diffused over the Campos, as Medicago, Centaurea, &c, which it will require a close Comparison to determine whether they are not of European Origin. — The Cyperus cundumculus, said to have been introduced from Europe into the Campos of Buenos Ayres, we found here also. — Most of these plants which follow the footsteps of man are such as cannot well endure the shade of trees, and of course cannot obtain a permanent position in a densely wooded country, like our own, except by the continued aid of art; but there is no such obstacle to prevent their spreading in the Campos, — where we in consequence have one method of detecting them. —

List of Plants collected at the Rio Negro. The following list was made out without an opportunity of referring to the late Botanical works. — We did not observe any of the Ranunculaceæ, Berberideæ, Violineæ, Cistineæ, Hypericineæ, Saxifrageæ, Cucurbitaceæ, Ericaceæ!, Gentianeæ, Asclepieæ, Aroideæ, or Smilaceæ.

Polygala ..... having the habit of our Polygonellas — Sand-hills, rare:
Malvaceæ - Modeste rupture, St H. Potentilla? rom; no external calyx; flow. red.
Melochia ..... procumbent; cal. calyx 2-phyll.; flos large. — of Palma. Linn. 577.2.
Oxalis bipartita, St Hil? ... flos. very small.
Erodium cicutis, St. Hil? .... leaves deeply cleft, as if 2 bound; rare.
Zygophyllum ..... flowers small; sand hills
Euphorbia? ..... a Common bush on the Campos. — Lower. Cor. -
Lepidium ..... flos. yellow. sea Coast; perhaps introduced
..... Sand-hills; possibly introduced

Rio Negro.

Cheiranthus? ..... vestiges observed by W. B. but specimens lost.
Melilotus ..... purple flor & smooth truncate pods! - Sand-hills
" ..... ⊙; pods very small, 1-seeded.
Mimosea ..... long strap-shaped pod; flor pale, with "tinge of pink".
" ..... pinn. multijug; Campos, W. B.
..... flor. glob. yellow; stem low & with spines, white.
Astragalus ..... ⊙; sand-hills.
Hedysarea-Adesmia ..... habit of Genista; spiny. flor yellow & small pinnate leaves
Adesmia ..... herbaceous; flor. yellow; sand-hills.
Legum ..... large shrub; thick fleshy pod; leaves deciduous; common -
Medicago ..... ⊙; Crinited pods & small leaves.
Sathyrus? ..... but style smooth; flor light blue; whole plant Sericeous.
Vicia? ..... ⊙; small spi; river banks. -
Legum ..... moniliform. 3 seeded pod, purple flor; habit of Galeja; Common.
" ..... flor. yellow papilion; leaves pinnate, more; round & rigid pods of Mimosea
Margyrocarpus ..... Common; Sand-hills &c. -
Celastrus? ..... spiny; leaves ovate, entire, petiolate. Shrub -
" ? ..... petiolate, crenate leaves, like Cronymus. Shrub.
? ..... Shrub - Obovate, entire large leaves; bac. 1. Seeded; seed hood like fruit Umbell.
Convolulus? ..... spiny shrub; alt. obov, entire leaves; Scapes oblong; 5 nerved; cal 5-phyll, deed.
Lythrum ..... very minute flor. - River-bank -.
Onychia? ..... axillary flor. -
Portulacca ..... smaller, more upright. Vide 13.
Oenothera ..... large purple flor. Sand-hills
Tillea ..... large yell flor., turning reddish in fading. Sand-hills.
Opuntia ..... muddy shores of river; specimens lost. Specimens lost, without 2d examn.
" ..... normal; borders of Campos.
" ..... ovoid joints;
" ..... small cylindrical joints; borders of Campos.
Cereus ..... Melocactiform; sometimes agglomerated; Sand-hills.
Mamillaria? ..... buried in soil to upper surface; margin of Campos.
Apium? ..... Rivers-banks.
Eryngium ..... stems nearly naked; capit-cylind.
" ..... ⊙; prostrate. - River-banks.
Hydrocotyle ..... River-banks.
" ..... larger; River-banks; specimens lost.
Umbellif-Melanium ..... leaves-tri-spined; caps. compressed; Campos.
Dueccus ..... ⊙; Sand-hills. -
Galium ..... ; rigid; 3-4 inches high. Sand-hills. -
Myrtea ..... low shrub; leav. oppo., lin., hirsute; veins differ.
Grindelia ..... small heads. - Sand-hills. -
Compe. ..... large, - coarse plant. - Sand hills. - glutinous.
Centaurea? ..... - resembling Brachysis; flor. Cream. Colr.
Cynara cardunculus? ..... ⊙; Sand-hills. -
Gnaphalioid ..... not over 3 ft. high; Sand-hills; introduced.
Senecio? ..... like Cape Helichrys. - Campos. &c; same - Buen. Ayres.
" ? ..... brown; simple leaves.
Gnaphalium ..... green, succulent leaves.
..... Sand-hills -
Cocculoid ..... capit. contracted at summit. Sand hills.
..... capit. aggregated. -
..... no ray; involucr. inter. monophyll.
Begelowia? ..... 2 sp? - glaucous.
" ..... branches dense, upright; flor. terminal.
Compe. ..... rigid, almost aphyll; used for brooms.
Ambrosia ..... small; habit of preceding. -
Baccharis ..... Sand-hills.
" ..... trinerved; Campos.
..... normal; only 3 inch-high. -
Compe. ..... larger; (4-prion)
Erigeron? ..... large - Coarse branch; habit of Genista.
..... somewhat like Cunnedora.
Stevia ..... but very yellow; flo large. -
Comp. ..... leav. lin, entire
..... - procumbent, coarse; very small. Shoot-peaks on right.

Vide Vol. 10.

Sonchus — runcinate leaves; prickly introduced?
Sonchoid — smooth entire leaves. flow. yellow
" — white flow.
Amellus — habit of diffusus; compos.
" — low. broad leaves; compos
Compos — small; like leaves; one term. flo
" — strong; capit. 5 flo.; very varying from to viride; Compos
" — habit of Gorteria; leaves simple; Compos
Galardioid — except palace; achen. 2 membran. arms; small bille
Solidago — Canad. Rills
Comp. — resembles serrulata; marshes &c. — leaves
Uraria — habit of Crispa - bands? rose
Rosa — [illegible]
[illegible] — small white flo
Comp — cult pales
" — [illegible]
[illegible] — [illegible]
[illegible] — [illegible]
" — [illegible]
Comp. — [illegible]

[illegible] — [illegible]
" — [illegible]
Lycium — [illegible]
" — [illegible]
Notarea — [illegible]
Crepsis — fl. pl. pink; styles 2
Hypnum — [illegible]
Asclepias — [illegible]
Verbena — [illegible]
Lupinus — [illegible]
Cerastium — [illegible]
Viscosus — [illegible]
Silene? — [illegible]
Caprarioid? — [illegible]
Hieracium cruciatum? — [illegible]
Senecio — like Jacobæa; spreading woolly [illegible]

Italic leucanthemum — [illegible]
" — [illegible]
Amarantus — flower-branches more upright- [illegible]
Cryptantha — appos. panicles spi. —
" — normal; upright — Canad Rills
Plantago — spear-leaved; like serrulata
" — ♂ like. leaves; spikes woolly; Canad. Rills
" — ♂ like leaves; — Canad. Rills —
" — like. Canad. Rills spikes normal;
" — like. normal;
" — like ♂ ♀ normal leaves; [illegible]
Senecio — resembling Amaranthus; habit [illegible]
Chenopodium — resembling a prostrate
Atriplex — procumbent; small dense leaves
" — procumbent; leaves; small leaved
Chen — upright, leafy; [illegible]
" — resembles Atriplex, leaves long, leafy [illegible]
Salicornia — 5 gyne; seed single; cal. 5-phyll; Stamb. decand. [illegible]
" — green, stem upright & woody. Resembles

Rio Negro.

Polygonum circulare?	probably introduced.
Mimosa	Borders of Arroyo.
Salix	[illegible]
Ephedra	Sand Hills.
Alternanthera	[illegible]
Fuirena	[illegible]
Cyperus?	[illegible]
Dissolutiflorum	Moist land.
Arethusoid.	[illegible]
Eriglochin	Salt marshes.
Cenchrus	Marshes.
Scirpus	[illegible]
Isolepis	[illegible]
Setaria	Campos.
Megastachya	[illegible]
Lycium	[illegible]
Zonax?	[illegible]
Eragrostis	[illegible]
Avena	[illegible]
Agrostis?	[illegible]
Uniola	[illegible]
Ceratochloa	[illegible]
Spartina	[illegible]
Panicum?	[illegible]
Melica?	[illegible]
Stramma?	[illegible]
Salsola	[illegible]
Apogonia	[illegible]
Elymus	[illegible]
Agropyrum	[illegible]
Polypogon	[illegible]
Aristida	[illegible]
Paraguinia	[illegible]
Azolla	Floating on borders of river.
Parmelia?	Stems & branches of an Shrub.
Arenaria	[illegible]
Silene	[illegible]
Hut.	[illegible]
Shrub.	[illegible]

Hydrophytes.

[illegible] was not favourable to their growth — neither did [illegible] Perhaps the mixture of fresh water, for a considerable distance [illegible] to their decay.

[illegible]

Genus. [illegible] and a species [illegible] smaller individuals [illegible] the fresh water, with which they grow [illegible] in company with the last; — the leaves however [illegible] of Martius.

Nymphaea [illegible] of a species of Nuphar. [illegible]

is black, with the white stripe on the back; according exactly with the figure of Azara, only "Zorro" is its Patagonian name."

Culpeo. . . . Some of the men spoke of seeing a Fox, but we got under way sooner than . — Azara however gives his "Aguarachay" as inhabiting this region as far as the Negro.

Cavia Patagonica. The Patagonian Cavy is very common, and would be given by the name of "Hare". Its habits do not differ much from that of the other Cavies (Apereas) at least in the upper part, except that the nest is in burrows, instead of low . . thin tunnels . . . of it is a fine hair like that of a Hare, but more crisping. It is told that this was their custom when pursued, "in numerous Companies, keeping the path which leads to their Dwellings". They were said to run at night, feed in pairs. On another occasion I found four together, two of which I left as I came, while the third disappeared in a ditch, but were rather awkward in their motions. — Their burrows are large, and they sit two or three together at open "Burrowing owl". A young one which I had in my hand, and which attempted to bite, . . . as reigns Lat. 35° as its Northern limit.

A Species of "Porcupine or Hedge-hog" was mentioned by residents as existing on the Campos; Unless it should prove the Urzacheu?, we know not what animal was intended. We should hardly look for an Echinus in this Latitude.

A species of Mus? or Small Rodentia was once indistinctly seen on the beach, but would hardly deserve notice except to call the attention of the future Visitor.

Dasypus. . . . An Armadillo is not abundant, apparently the "tatu peludo" of Azara: 7- banded Armadillos were brought on board, who buried themselves in a moment in the sand with great rapidity. They were quarrelsome, and it was observed that when fought by two, one rolling himself up till the other stuck in his exertions — they instinctively commenced to work at the ends of the feet, covering at the same time the dorsal bands, and endeavoring to bite the ears of the opponent fiercely. At other times they made no attempt to bite; and were not very active in their motions. The flesh was devoured with some show of voracity, was tender, and not unpalatable, and lapped water with the tongue, Azara's assertion to

[illegible] ... [illegible] — We were [illegible] ... but [illegible] yet be an Animal that "never drinks" — Azara gives the Northern kind of this species 2nd 36° — Something was said of another larger species, perhaps the "Falcon velue" of Azara.

Anchenia ..... The Guanuco is also found here, though not mentioned by Azara. Several nests were procured, and a living specimen was brought from town. It did almost immediately, as it would. From the short description I have of my own will be the A. viridissima.

The Accipitres Vulgares of Hist. and several kinds of Gallinæ, but all in a limited state. Hogs were also shewed, and Hogs were obtained from town. They also common about habitations, but none that had regained their wild state.

Ornithology.

Birds of prey were extremely multiplied, and far from shy. It was a novel sight to find the Caracaras perching, sometimes it is true on the bushes, but more usually on the sand, and even in the mud of the river banks. — But in an unwooded country like this Birds of prey generally may be often under the necessity of resting on the ground.

Caracara vulgaris? — This was the largest we met with; and seemed to me larger than as found in Florida. Though the markings do not differ, if my memory serves me. The skin about the bill has not the "bright red," figured by Audubon in the Florida specimen. Its talons are very powerful, as I have myself witnessed. — A second species was procured, small, the colour pale and mottled much like that of the Owl; which I have somewhere seen figured. —

Buteo ..... A species was procured, resembling in many respects the common Buzzard of Europe.

Strix ..... A species of "Burrowing Owl" inhabits the Burrows of the Tatuguinus Cuvy; and agrees entirely with the "Urucurea" of Azara. It is diurnal and has the same cry and habits. It most certainly does not excavate burrows for itself, as we should not find it so dependent.

Tyrannus Savanna. Judging at least from a distant view, for no specimens were procured. Two individuals were seen in the vicinity of the marshes, flying, the

Long

long pull as of the bird flying with it mind.

Caprimulgus. A species of Nighthawk was seen many times in the evenings. Neither of the species is at present identified, perhaps on account of the lateness of the season.

A small Brownish bird was observed on the margins of the rivers, but it flew so fast that it might be an Anthus. It had the same habit of moving the tail up and down, as the Wagtail.

Sturnus Ludovicianus. The Tenuirostral Starling was seen, perched on the ends of the branches of trees.

A bird was seen once during the heat of the day, which with black wings and tail, white rump and breast was conspicuous pretty well with the "Tyrannus dominicensis" of Azara. Vol. III. p. 402. -

Hirundo ----- A small species was frequently seen flying among the boats. - A larger species having the habit of the "Hirundo Purpurea"; or small as the latter, but not so loud, smaller, and the plumage dull blackish, - was observed about the cliffs; and appeared to have built its nest in the perforated holes within. - A nest in one was found in one of them. -

Psittacus ----- The green feather of a Parrot was picked up on the beach, and a flock was reported to have been seen. This may seem rather unexpected in so unwooded a country but the instance is not single - see Azara.

Tinamus? ----- At least its flight was too low & laboured and its size rather too large for a "Colin" or "American Quail". It is common, and is called "Curtindy". Its general colour the same as that of the Rail. Perhaps it is the species referred to by Azara. (IV. p. 141). - A light purple egg was found, perhaps belonging to this bird. -

Rhea. The American Ostrich is common and we had an opportunity of a hasty dissection (see note book II. p. 23). Its stomach which was muscular and very large, was crammed with Grass - hoppers and other insects, grass, roots, and seeds, & pebbles of sizes &c, but contained no Lizards or flesh of any kind. The intestines had a row of plates before and behind. According to Azara the "Nandu" is found from the Tropic to the St. of Magellan.

Vanellus Cayennensis, was very common, and by no means shy. Its shrill note might be heard a long distance. From its large size and deliberate mode of flight, one would hardly at first take for one of the Tringidae. I do not now recollect to have seen it run about after alighting, like the other shore-birds. It kept about low places and the shores of the river. -

Insects.

Other Tringidæ, of small size, were observed during the visit on each beach.

Lepidoptera. A few specimens were observed, but not secured.

Diptera. Mosquitoes were observed on the coast, but not sufficient to determine the species.

The only species of bird not mentioned in the list, a rounded mass of seaweed, was dislodged from its bed in the bank by a footprint of one of the birds. The bank was composed of sand and small pebbles, and the seaweed was found to be the remains of a nest of the bird, probably of the species.

Reptiles.

Colubridæ. A snake was seen on the coast, but not secured, and could not be identified with any species described.

Testudinidæ. [illegible] were observed on the coast, but not secured.

Fishes.

Percidæ. A species of [illegible] was taken in the [illegible] and [illegible] in the [illegible] and [illegible] in the [illegible] and [illegible]

Mr. Sage.

[illegible]

Coleoptera.

[illegible]

Calosoma [illegible]

Calosoma [illegible]

Calosoma [

Ornithologie.

[illegible] small black with at least [illegible]

[illegible] over in advance of the eyes that.

Cyperbirus [illegible] small the eyes [illegible]

Lanius [illegible] much resembles [illegible] but [illegible] the body depressed the thorax wide the wings [illegible] tail [illegible] excavated, and first pair of tarsi wanting. Two stiff at the extremity of the [illegible] both pairs of feet [illegible] furnished with long toes [illegible] suit with [illegible] improvidamus by. It has [illegible] all the claypeus long; and the [illegible] ones or not. Tail [illegible] pyramidal. It may [illegible] as the [illegible] [illegible] was more [illegible] [illegible] small.

Gymnoderus [illegible] small; & scarlet and entirely [illegible]

Scolecivorus [illegible] eyes eyes tuberculous.

[illegible] [illegible] small tubercles on each [illegible]

Ceraia [illegible] eyes eyes; [illegible] [illegible]

Myiotheta [illegible] eyes claypeus [illegible]

" claypeus granulated.

" claypeus absolutely [illegible]

Pteroptochus Tarnii, Quoi? [illegible] eyes [illegible] [illegible] eyes.

Prionopterus [illegible] eyes; [illegible] [illegible]

Thamnophilus [illegible] eyes; [illegible] [illegible]

Cryptocephalus

Lanius [illegible] eyes; long [illegible] [illegible]

? [illegible] eyes; [illegible]

Corythus [illegible] small eyes.

[illegible] small eyes.

Loxia [illegible] [illegible]

Carduelis [illegible] small eyes [illegible] [illegible] [illegible]

Rio de Janeiro.

Nemesia — nine Ulva curtis, but small.

Celeus — pallens: apparently a pale ochre species.

Sotalia — large, white.

Salpa cordiformis — pair of.

Byblis — sp. [illegible] common to us; but Salpa [illegible]

Spirula — obtained but in one H. Europe; small

Crambus — a large white species.

Noctiluca — appeared to be small and brown species common on board; but mostly lost.

Scolia — [illegible] large sp. evidently black.

Pyxtis? — [illegible] pallens sp. 1 or 2 Ul.

" — [illegible] tibiae & tarsi, 2 pale bars; [illegible]

Myzine — Ul. [illegible] but small.

Pompilus — small, black: abd. red at base

" — [illegible] Ul.

" — very large; steel blue; flame col. pale & wing. What appeared to be H. not: was small. smaller; the legs longer; and the ant. [illegible] Ul. was quite common.

Sphex — abd. sessile with a black band; [illegible]

" — equal, large [illegible] steel blue

Larra — black; abdomen [illegible]

" — black; Benicus bands on Abd.: pale wings.

Mutilla — not uncommon

Ateuchus — rambling in form. Wings pallens Abdomen fusc, but apex large and a space for thoracic depression observed; Thorax spiny; — head & thorax rufous abdomen blackish. — is what appeared the winged state, being larger than [illegible] and two spines behind.

Myrmica? — less than preceding; Thorax 2 spined; head small. only in winged state, black.

" ? — very small, black; Thorax [illegible]

" ? — neuter only seen; colour pale — rufous; Thorax unarmed. Thus [illegible]

? Ants were swarming at H. time of our first excursion and we were very much incommoded by their numbers.

Cockles

Rio Negro.

Collected [illegible] all of the Ufida observed, though it was probably in greater abundance [illegible] small valves.

Anatinus [illegible] large; black wings; colours [illegible]

" [illegible] large; black wings; colours [illegible]

Ensilus [illegible] large; pale; colour [illegible]

" [illegible] equal size; red band on abdomen.

" [illegible] smaller; narrow transverse bands on abd.

Unionidæ.

[illegible] found [illegible] "Rio Negro" (Castelnau)

Melaniæ

A few miles up the Rio Negro, a Fresh water Univalve was abundant, the Limnæa, Cuvieri; a group which appears to be peculiar to Austral America, other species being found in the La Plata, &c. – It is probable that Unionidæ might have been found higher up if we had had an opportunity of examining [illegible] Mollusca were [illegible]

For the following list of Mollusca I am indebted to Mr Cuvier, by whom the specimens were chiefly procured.

Physa	[illegible]
"	do. – do.
"	do. – do.
Solen siliqueum, Linn?	
Petricola	
Mya	in "mud"
Venus	resembling [illegible]
"	odd valves.
"	do.
Cardium	do.
Arca	one valve – much worn
Pectunculus	
"	perhaps another species.
Modiola	one small species – living
Mytilus	do. do. living
"	do. do. living
Pecten Patagonicus, King?	odd valves only.
Placuna	specimens rare.

Collected [illegible] all of the Ufida observed, though it was probably in greater abundance [illegible] small valves.

Anatinus [illegible] large; black wings; colours [illegible]

" [illegible] large; black wings; colours [illegible]

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Mytilus	do. do. living
"	do. do. living
Pecten Patagonicus, King?	odd valves only.
Placuna	specimens rare.

Fissurella — do.
Calyptraea — Dispolon Rio
Crepidula unguiformis, Lam. —
— — — —

Terra del Fuego

Orange Harbour is situated in Lat. 55° 30° S., at [illegible] to the East [illegible] Cape Horn. The [illegible] was the only part of the [illegible] the South East part of Terra del Fuego, most of which, from the clouds being low, was in sight at different times.

The [illegible] coast [illegible] rocky; and a good deal of the [illegible] of Staat. Land. It is [illegible] from the water part is clear, though [illegible] height [illegible] land. The [illegible] land with a few [illegible] the sea. Yet, notwithstanding the excessively rugged nature of the [illegible] principal and [illegible] deliniated "mural rather than [illegible] is extremely "iron bound," excessively indented and for the most part [illegible] and with cliffs, and never are often besprinkled with rocks; — [illegible] and between the islands in general is deep [illegible] and are clear only [illegible] intervals. — King's Chart may justly represent the general configuration of the land, sufficient perhaps for the general purposes of Navigation; but the inner channels are [illegible] very much contracted at the entrance [illegible] much concealed by the character of the land that a stranger [illegible] be the work of time.

Geological character. On first viewing the land it [illegible] had no doubt of its being eminently volcanic; and one is naturally led to [illegible] that this idea must have suggested the name, "Terra del Fuego" to it. [illegible] We were however unable to detect the slightest evidence of any existence and [illegible] our view is confirmed by the observations of King. — We nowhere found any [illegible]

of Cellular Lava, Trees & Vitrifaction. — [illegible] what is stated by King (in his "Sailing Directions"). — We found the rocks [illegible] gin, or at least, more or less altered by the action of fire. — In general they were dark coloured and the constituent minerals could not well be distinguished, and often full of small irregular cavities. — Mr Dana found some with [illegible] with rounded cavities, somewhat like that from the vicinity of Boston. — Mr [illegible] Dana found very [illegible] of Fe Bruch [illegible] Epidote, compact or rather diffused; Stilbite; Quartz in veins &c.; Felspar: Lon: bonate of Lime in veins &c.; and Hornblende and Datholite according to [illegible] ne. — On one of the hills on the Main, in the Straits of Le Maire was observed a crust of Basalt, but with a [illegible] Lamus. — Nothing similar, or at least of so distinct a character was seen subsequently. —

Opportunities for Observation.

July 14th 1839. — To day passed through the Straits of Le Maire. [illegible] appeared uncommonly rugged, and through the glass [illegible] or full of low cavities, but we afterwards understood from Mr Fitz, who landed here, that such was not the case. The tops of the peaks had a remarkable whitish appearance, standing down in regular streaks, as if produced by Siliceous Incrustations or Volcanic — the presence of the Basaltic crust [illegible] as a sufficient proof that it is not owing to the presence of Snow, as might be conjectured from [illegible] top of the [illegible] covered with forests, the whitish tracts and bands among the whole same-ness of the "piling of cobwebby" appearance. — Good-Success bay is in Lat. 54° 46', nearly a degree south of Orange Harbour at which [illegible] Vegetation is much more luxuriant. — Trees or [illegible] visible. —

[illegible] freezing point, the temperature
[illegible]

Feb. 16th — [illegible] Woolwich Cape Horn, a very remarkable promontory [illegible]
[illegible]

Feb. 17th — [illegible] 56° to 58°. — The land to the
[illegible] remarkable reflections, which have, to [illegible]
[illegible]

The Coast is [illegible] with a thick bed of the Macrocystis pyrifera,
called by the [illegible] as the Laminariae are in the Straits; which is a great
convenience in rowing the Boat, and in all this [illegible] necessary it is
[illegible]
[illegible]

The hills [illegible] Coast of Terra del Fuego [illegible]
[illegible] which at the Eastern entrance of the Straits [illegible]
[illegible] The deciding term seems to be the [illegible] Terra del Fuego at the Straits of Le Maire,
which

[illegible] to mention in this respect to Cape Cod on our own coast. We have been accustomed [illegible] to associate an iron-bound coast with the great sea of the [illegible] as we see it in many pictures. Take for instance [illegible] Gulf of Mexico [illegible] the Alluvial and dissect out the land.

This day and the following night were spent in [illegible] to Orange Harbour.

Feb. 18th — when we arrived at day break this morning; but all hands were so worn out that I did not get up [illegible] Mr. Stirling [illegible] Mr. Bynoe and myself to examine the Bay in company with Mr. Low, Mr. Wickham and Breckenridge. — We found an Indian hut on the island, situated, like that we [illegible] we saw subsequently, in different places, just on the margin of the water, many a small growth of wood to keep, Canoes, Kennels &c. — [illegible] of them we saw were sufficiently high to permit [illegible] entrance barely admitted one person to crawl in. There was a hole in the [illegible] the passage of the smoke & for their light on the outside. [illegible] Examination of the Indians birch bark canoes and dispersed to us to steal the pair — Sometimes they were thatched with bulrushes, [illegible] the walls were quite open. The entrance was uniformly encumbered with a large heap of the shells of Mussels & Limpets, the Animals of which seem to form the chief sustenance of the inhabitants. A foot-path was [illegible] through the woods leading to the shore, and this, with the slight [illegible] at long intervals, was the only change which the land [illegible] in this region.

The arms used by the Indians consisted of Bows and Arrows, Slings, and [illegible] headed lances. The Arrow-heads were of flint, or rather [illegible] cadency of wood is frequently the same [illegible] with the [illegible] wood twelve; the shafts were of the wood of the [illegible] and were very small [illegible] were also the bows. The bone heads were formed of the [illegible] Animal, and were sharp pointed and barbed and very neatly finished. Some of the [illegible] were fixed in pairs of this description. — The slings were of [illegible]-skin.

We observed at a distance [illegible] proceed to the Eastward, but it left before [illegible] reached the Vessel. As I had no opportunity at any time of [illegible]

[illegible] Esquimaux [illegible] Esquimaux [illegible] Esquimaux [

Feb. 19th — [illegible] to the [illegible] and [illegible] to the [illegible] and [illegible] to the [illegible] and

[illegible]

Feb. 22nd — Landed on the N. Western Head of the Island to get the Eggs of the Gannets — found on the Stacks by which we passed a number of small birds. — Had an indistinct view of Dusky Land to the S.W. Saw Petrels as usual, with long hair, and the Gannets & Cape Pigeons. — The Island also has a small Penguin, not like a Jackass. — Was met with a Heavy Gale of wind, so that we were obliged to put in the Bay for the night & lay at Anchor in the very place we left in the morning.

The water in all this region is coloured by vegetable matter, in consequence of the kelp & various species of the Fucus tribe; and though not so foul as off the Falkland Islands, is yet very much discoloured and deteriorated on board ship, though might always be used if the worst came to the worst.

Feb. 23rd — Went in Company with Messrs. Southcomb and Rowlands to the highest part of the Island. Saw a small Lake filled with Ducks connected by an exceedingly narrow and jagged ridge — the sides of the Island for several hundred feet high are composed of semicircular beds of stratified rock, of which specimens were procured from the Outcrop. Also specimens of Helices, some from the top of the hill, and a number of Mineralogical specimens. — Returned to the Vincennes, the [illegible]

Feb. 24th — Went to the watering place with the intention of going to the Island to the shore with the intention of going to the watering place, but fell in with Mr. Sandford and some of the crew fishing.

Returned

returned with him to the Vincennes. – We accordingly set sail and bore up for Port Famine. Fine weather, Thermt. 40 deg.

Feb. 25. – Employed getting wood & water. Capt. Wilkes returned through the Straits of Magellan, to sail by the 1st of April for the Harbour by the 15th of April". – We the same time the Vincennes sailed to the Southward & Eastward, with the Tender in company. The Vincennes and Capt. Wilkes went to the Southward and Eastward. Messrs. Hudson and Drayton remained in the Vincennes to await the return of the Tender. Fine weather, employed getting wood & water on board the Tender, & in the afternoon sailed from Port Famine.

Feb. 26th. – Sailed from Cape Froward with a fair wind and pursued the course of the Straits the following day. Fine weather during the night however the wind became adverse.

Feb. 27th to 29th. – After contending against the wind and strong currents for several days, kept during the night & part of the day, & at noon this day we were abreast of Cape Gregory. Fine weather, with the exception of the latter part of the 28th, when it blew a fresh gale for several days at a time. – and rained hard for a fair day. We experienced the most tedious, and the most fatiguing navigation that it is possible to conceive, owing to the wind blowing so violently. Capt. Wilkes determined to run through the Straits of Magellan, & not to go round Cape Horn, as we had originally intended, & as the first part of the following day – the Tender was accordingly ordered to keep in company.

March 1st. – During the night the wind had shifted to the West, and it was now blowing a hurricane, so that it was impossible to ascertain our precise position — We stood off to the Eastward and Southward as far as possible — it clearing a little, we discovered land judged to be "about 12 miles distant", but it was impossible to ascertain which as we did not discover the "Tower rocks" till we were almost on them. They presented a magnificent and fearful spectacle. The sea completely breaking over the entire rock, and falling on the land going at the rate, with the least possible sail, we could not have stood twice. There was now left for us but to seek shelter under Navarin Island – the nearest to the Eastward point of the Island. It is [illegible]

[illegible]

March 19th — This morning the highest point, which is the two-headed [illegible] Bay that we saw from the [illegible] The wind had abated a good deal, though the [illegible] point of land [illegible] which we could be [illegible] with boat [illegible] the [illegible] it was [illegible] increased again, and soon the water was [illegible] us.

On old Stokes' Chart we found the "going to sea" 43 years, and had now [illegible] rowed heavy rolling sea, the very little [illegible] on the rocks beyond and let it, and was very heavy all along the shore, except in the narrow [illegible] stretching up at times in columns, like its appearance is similar under the effect of mirage. Stood over near the [illegible], except in picture, when I had supposed it to be only the work of Fancy; and the idea [illegible] broken land was in reality [illegible] we began to suspect to be. [illegible] we had hoped about to the N. E. point of the island, but after dark the wind [illegible] N. W. and blowing [illegible] currently, at the [illegible] full power, the sea and the water increased rather. We came near drawing with the point [illegible] tailing directly on a rocky, which soon did us appear more than three ships lengths off. Fortunately the wind gradually abated, and got round by it. It did quite. — The above is an [illegible] of our position without the [illegible] having to [illegible].

March 20th — Noir island. This morning was completely [illegible] Fuego. The wind had moderated a good deal, and from the [illegible] it was evident that we had parted one of our anchors. The chain was [illegible] difficulty, and we soon found that we had besides lost one [illegible]. It was now evident that we could not make out another night like the last — until we replenished with a good deal of coal. We had [illegible] the wind slightly [illegible] as it had done the [illegible] morning.

Vessels &c. Cargo.

Commerce being [illegible] the greatest of the blessings which [illegible] bestow on any [illegible] but reasonable wants. — The [illegible] which [illegible] for through the [illegible] would [illegible] to [illegible] for [illegible] [illegible] [illegible]

Terra del Fuego.

with it in a zone extending to the distribution of timber, the upper [illegible]
"that land was a legacy from the Gods" [illegible] high ground [illegible] be
low down, for it [illegible] the [illegible] on which [illegible] with [illegible] pa
ra Range, and the general growth [illegible] the prevailing plants [illegible]
is thus [illegible] as well as the soil, climate [illegible].

In our excursions on the Uranis we found a great [illegible] of [illegible]
Alpine forms, though the vegetation everywhere was equally de[illegible]. We found
carpets of the Pelanthium? pusillum, often covering acres with but a slight int
-mixture; and tufts and patches of more distinctly capitose plants, as Cassebolus, Ga
-mardia, Witsenia?, 2 or 3 dwarf-flowered Plantagos, half a dozen minute Compositæ
some apparently forming new genera, Donatia, several minute Umbelliferæ, as Bolax & Azorella
2 or 3 Sagines, Forstera, a small-leaved congener of Gaultheria? appendiculata, a Viola with
[illegible] leaves. — [illegible] of [illegible] were [illegible] by the [illegible], and [illegible]
readily [illegible] the eye even [illegible] Between [illegible] there [illegible] a [illegible]
of a firm consistence, as in the Alpine flora, but [illegible] and [illegible] very [illegible] even with
the [illegible]. — Even [illegible] with the above were [illegible] plants almost equally humble, as Vian
-dea, a Pimelea, Pentaptera empetrifolia and another Ericaceous plant, Pratia repe
-, Myrtus? nummularia, Rubus Geoides &c; also occasionally some true mosses, Lich
-, and in the wetter [illegible], reeds, [illegible]. The [illegible] with [illegible] between is a
scattered manner by various grasses, Juncus? grandiflorus, a white-flowered Senecio?
and some [illegible] Compositæ, (I name only the prevailing plants), and low shrubs
a foot or two in height, as Escallonia serrata, Olearia? [illegible], Pentaptera acuminata,
Empetrum rubrum, [illegible] in great profusion, and other woody plants reduced to
the same dimensions.

The first [illegible] of [illegible] we [illegible] in [illegible] and [illegible] at first
thought it [illegible] from the [illegible] for when on the ground [illegible]
death [illegible], even [illegible] the heat of the day, it was [illegible] but
but [illegible] the spongy [illegible] in such situations is [illegible] of moisture for their [illegible]
-sistence. — The "Evergreen Birch," Betula? [illegible] is [illegible]
[illegible] is [illegible] with [illegible], [illegible] it name [illegible], the Bark [illegible]
and Winters only occasion sight, at intervals. [illegible]
i.e. that of large [illegible], the [illegible] and [illegible]

[illegible] the Forest [illegible] the [illegible] of the [illegible] [illegible] [illegible]

perhaps V. bracteatum, was quite rare.

The Calluna vaccinium would rather predominate in the Alps, to which only part of it may belong of medial duration, when the soil cannot attribute the annual growth of [illegible] to a considerable height, after which it found the latter succumbing to cold with a great deal of regularity. And the patches, however, of various composition, had everywhere the look of being mixed with the Juniperus. The Juniperus communis indeed grew here to certain altitudes. Usually on the tops of the higher ridges, any thing rounded was worn down precisely to the surface. The grass being usually covered with prostrate growth and stages thus drawn, the tufts of vegetation are only found here and there in the interstices, are more moss-like than grass-like in their appearance and might even be overlooked without by the incautious botanist; they are tightly matted and so firm that it is difficult to collect specimens except with the aid of a knife. The vegetation was composed for the most part of the Alpine species above enumerated, but there were others not [illegible] found on the higher ridges, not always strictly "alpine" in their mode of growth; especially in sheltered crevices and about the melting snow — as

Luzula
Plantago
Poa
Arenaria
Saussurea
2 or 3 Senecio
Saxifraga
Cer. [illegible]
Draba
Anemone
Gnaphalium
Cerastium

2 or 3 species.
the former rapid leaves covering the [illegible]
A minute white grass and species.
Like the [illegible]
large, like that [illegible]
Small, caespitose — rare
[illegible]
2 species.
with a single terminal flower.
[illegible]
viscosum with a red capitulum
[illegible]
[illegible]

&c. — At the very tops of the Peaks the Alpine melaxantha? overgrown with [illegible] and the rock as its component to the limbs of trees and also the Saxifragae tardiores? and some other [illegible]. But it is the dwarf trees that the top of the pass of moderate elevation presented a landscape to the eye not [illegible] with the Alps; those on the Saxifragae were frequent since at an [illegible] perhaps 500 feet.

Aquatics. — We found no aquatic Phanerogamous plant; and the [illegible] was

was the Caltha? sagittata, which was peculiar in its habit of growing on the dead margin of the alpine pools; but rare. The only tree upon the mountains was the beautiful Beech: fragrantly not with, but the finest specimens were to be seen. The tufts of an upright [illegible] were [illegible] in water, in many instances; and more than 11 [illegible].

Useful vegetables. — It is decided [illegible] that the mucilaginous, with no [illegible] of the [illegible]. The Berberis was much [illegible] than [illegible] a rank growth; but was [illegible], and an acid [illegible], and perhaps might be used [illegible], — and as [illegible].

[illegible], Festuca, a tall Aira, Agropyrum latiglumum, Drimys winteri with four leaves on long petioles, the Veronica? decussata, a highly ornamental shrub; a very large herbaceous Cineraria? bearing corymbs of white flowers, conspicuous at a long distance: a large herbaceous Chrysosplenium?, Galium latifolium; Apium [illegible] or "Wild Celery", excessively abundant; a large Ancistrum, the burrs of which were very troublesome; a tiny-leaved Cerastium; the Cardamine or "Swamp grass", by no means abundant, [illegible], none of which might perhaps have been ranked among the [illegible]. — On the rocks [illegible] grew a Plantago with the leaves more or less dentate, an Oxalis near Magellanica, a 1-flowered Ranunculoid Umbel, scarcely an inch in height, [illegible] two species of Bolax were [illegible] the two species, Azorella, &c. &c; all, except the Oxalis, having more or less of the Alpine habit.

Subaerial plants. — The Environs of Orange Harbour are as little adapted by the [illegible] as a District could well be. — The only trees of this portion that are [illegible] were a single plant of an Antarctic growing in the centre of a deserted hut — which we reserve for the purpose of comparison. — As we procured wood and water at this place, and [illegible] to remain some time, it may become of interest to learn whether any of the [illegible] weeds" shall hereafter make their appearance; a point which can be readily ascertained by referring to our list.

Composition of the Vegetation. This region is remarkable for the [illegible] of

of the alpine forms of Compositae and Umbelliferae; — which two families may in this respect be regarded predominant. Next to them come the Gramineae & Cruciferae; and then four families, which like the Compositae & Umbelliferae contribute largely to most of the preceding Families, exclusive of the Cyperaceae, may be mentioned, in the following order.

1. Compositae	6. Cyperaceae.
2. Gramineae	7. Filices.
3. Umbelliferae	8. Juncaceae.
4. Ericaceae	9. Coniferae.
5. Rosaceae	

In which respect they come in entire accordance with the Falkland Islands, judging from the account of Gaudichaud; — most precisely in this, that we find in the entire absence of the following Families, viz.

Polygaleae.	Verbenaceae.
Celastrineae.	Solanaceae.
Hypericaceae.	Amaranthaceae
Terebinthaceae.	Chenopodeae!
Leguminosae!	Polygoneae!
Lythraceae.	Euphorbiaceae.
Cucurbitaceae.	Urticeae.
Apocyneae.	Alismaceae.
Convolvulaceae.	Liliaceae.
Boragineae.	Aroideae.
Labiatae.	Typhaceae.

The presence of two Tropical forms, Cruciferae & Polygoneae, in this Antarctic latitude, is especially worthy of notice. The number of Compositae and Umbelliferae accustomed to consider them, Boreal forms, is still known to be considerable, as may be seen from our list; at the same time there is a lack of those which are peculiar, or at most common to the other mountainous districts of Austral America; — amounting from our list, 53, part of which have not yet been made out, to 60 additional others to be found when the specimens shall be more carefully examined. (We have underscored such as we thought might prove peculiar forms.). — An observation

Terra del Fuego.

the Cranberries were the only plants that I met with capable of use as [illegible]; not so the other kinds, Currants were the only Fuegian plants which we have met in the United States.

The trees of the land which are capable of [illegible] except those of the Evergreen & entire-leaved Berberis; and even here we have some doubts as to the [illegible] or materially to check Vegetation; — which however at all times must be exceedingly slow. In consequence of our not returning to Orange-Bay we lost the opportunity of making any positive observations respecting its progress. — We saw no prostrate vines, either woody or herbaceous; no Annuals except diminutive Lagenophoras, that grew Alpine, certainly were in the open districts; and no genuine bulbous rooted plants. There seemed a strong tendency in the grasses to become viviparous, which indeed was the usual state of some. The Umbellifers presented a mode of growth which is perhaps deserving of special notice; externally they had all the appearance of the other Alpine plants, but in place of being compact & full-branched bushes, the top was rather a "many-rooted" one. [illegible] even when [illegible] soil? — Dead leaves and [illegible] deep, very much [illegible]; [illegible] adherent to the subterranean stems of Alpine plants, which however [illegible] such instances. — In short: this Alpine [illegible] Alpine [illegible] and in greater perfection, than perhaps is to be found elsewhere.

List of Plants collected at Orange Harbour. —

[illegible] — [illegible] in Woods.
Gaultheria — & Mountain-Borders of Mountain-peats, rare
Gaultheria appendiculata. — remarkable habit — probably also a shrub
[illegible]

Winteria aromatica — A Common tree — just flower.
Berberis ilicifolia — Common [illegible] & [illegible]
& Petals, Bract. —
Cardamine glacialis DC. — [illegible], large [illegible]
Ranunculus — [illegible]
Viola — [illegible]
maculata: — densely cespitose & alpine [illegible]
[illegible]
Drosera uniflora — most dwarfish

Berberis — a fine high — bearing tree — Coast.

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Stellaria dilit. 2 Hb.

Oxalis

Genus

Shrub. Silk

Rubus geoides

Geum parviflorum

Acaena pinnatifida

Epilobium

Hydrocotyle

Gunnera

Osmorhiza

Drosera

Myrtus

Fuchsia

Berberis

Ribes

Escallonia

Chiogenes

Saxifraga

Pernettya

Empetrum

Nothofagus

Drimys

Winteranus

Pernettya

Myrsine

Gaultheria

Pernettya

Myrsine

Gaultheria

Asteroid

Chaetotheca Commersonii Hb. - not uncommon

Asteroid

Massaurica

Tunicata

Gregatina

Cespitosa

Vaginata

Tenuis

Crassa

Crassa membranacea

Cruenta

Cana

Nigricans

Fusca

Squamosa

Lanuginosa

Tomentosa

Velutina

Corticata

Turbinata muscosa

Umbrina

Endothrix

Ectotrix

Urceolata

Alveolata

Fagea

Mollis

Emplastrum adnatum

Filamentosa

Membranifera; peritheciis

Volvata

Gemmata

Cellulosa marginata

Cellulosa; Lichenis

Tierra del Fuego.

Gramineæ indeterminatæ

Juncus
Juncus? gracilimus
Luzula

Uncinia:
Carex

Agrostis
Poa
Festuca
Deschampsia?
Phleum
Bromus
Elymus?
Angelodactylis antarctica

Umbelliferæ

Gen. incert.
Lomatia
Blechnum?
Aspidium? lonchitidoides
Woodsia
Gleichenia *
Aspidium? mohrioides (Bory Voy. Pl. 35)
Asplenium
Grammitis?
Lycopodium

Cupuliferæ: Fagus antarctica, Forst. Comm. Soc. Gott. 1811.

Tierra del Fuego.

Terra del Fuego.

Comparisons with the Falkland Islands. At the Magellanic [illegible] between 52° and 55° S. Lat. we collected [illegible] Between Cape Horn & Staten Island [illegible] between S. Lat. 51° and 52° 30', 185 miles (geog.) from Staten Island [illegible] The same [illegible] The same [illegible] [illegible] [illegible]

Flora del Fuego.

including the following Natural Families, Celastrineæ, Grossularieæ, Saxifragaceæ, Loranthaceæ, Myrtideæ, Rosaceæ, Amentaceæ, Lentibulariæ, & Juncaginæ Bedeoideæ Magadiaceæ.

List of Plants at the Falkland islands, not in our [illegible]

p. Ranunculus [illegible]

p. -

p. Erysimum [illegible]

p. Cardamine [illegible]

p. [illegible] pumila, D'Urv.

Callitriche [illegible] (?)

p. Stellaria [illegible], D'Urv.

p. Myriophyllum [illegible]

p. - - -

Sagt; resembling European species, and which require a close comparison with them like Juncus, Trisetum like subspicatum, Agropyron like glaucum, Armeria like cespitosa, Primula like farinosa, Apium like graveolens, Limosella like tenuifolia & Montia verna? Galium like trifidum, G. like Aparine, Cardamine near hirsuta, Carex like pauper cula, Sagina near procumbens, Stellaria debilis, Cerastium like linearis, &c. &c. — Above I noted but a small portion of those growing about the granite rocks near sea water from having the largest instance added by Mr. Anderson. These species may have originated at different points of the coast &c.

Comparison with the Rio Negro. It is remarkable that in all our excursions we did not meet with a single plant we had previously seen at the Rio Negro; — and three instances only occur at the Falkland islands, the Azolla (which however is in part retracted subsequently, by Gaudichaud), the Limosella, and Callitriche, which last may probably exist at the Rio Negro, but was not found by us. The absence of such plants as the Statice, the Chenopodeæ and Polygonea, was quite unexpected. — The Limosella "Montia, Juncus &c. &c. yellow flowered Composite at the entrance of the Lower Grounds of the Strait;" mentioned by King as existing at Port Famine, Lat 47°. 43', is perhaps rare: Strictly comparable with yellow flowered Composite of the Rio Negro.

Hydrophytes.

Marine Vegetation appears to follow an inverse rule with respect to temperature, from Aerial; the densest, most luxuriant, most varied, and the largest species, being found in the vicinity of the Pole. In this respect the Antarctic seas have much the advantage. —

In approaching the shores of Terra del Fuego, whether exposed to the sea or in the most sheltered harbours, we everywhere met with a bed of the Macrocystis pyrifera; and it is the same in the Straits of Magellan, according to the reports of Navigators. According to Cook it sometimes springs from a depth of 12 or even 20 fathoms, Kingmentions 16, and on occasions picked up some pieces at sea more 50 feet in length;

and

and [illegible] It [illegible] It [illegible] [illegible] It [illegible] [illegible] It [illegible] [illegible] [illegible]

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...ming of more careful observation: and perhaps something of the kind takes place in other aquatic plants at times of Eruption.

List of Hydrophytes from Terra del Fuego.

Confervæ . . . . . [illegible]

Oscillatoria . . . . . [illegible]

Spirogyra calliblastus? . . . . . common . . .

Leptomitus? . . . . . [illegible]

[illegible]

[illegible]

Diatomaceæ . . . . . the most beautiful [illegible]

Navicula

Surirella . . . . . [illegible]

Synedra . . . . . [illegible]

[illegible]

Odontidium . . . . . [illegible]

Cocconema . . . . . [illegible]

Encyonema . . . . . [illegible]

Gomphonema . . . . . [illegible]

Rhoicosphenia . . . . . [illegible]

Meridion . . . . . [illegible]

Rhabdonema . . . . . [illegible]

Fragilaria? . . . . . — not fibrous — about 1 or 2 in. — found also Sandwich Is. (Mr. Rich.) Stem cells numerous [illegible]

Hyalosiphonia? . . . . . — resembling H. variegata D. — M. Rich.) — Cell forms [illegible] Lake Thomson

Rhodomonas . . . . . — cells very minute but filled with magenta [illegible]

Fucus . . . . . [illegible]

Mammalogy.

Lutra . . . . . A small Wolf appears to be not uncommon [illegible] ...silis, mentioned by Messrs Rich. and Agate, and there were procured during the Voyage of the Vincennes. — One of the latter showed a good deal of Yellow fur, attached [illegible] was carrying Wood. Colour much like that of our "Prairie Wolf" [illegible] of Parent, Nature . . . ; the tail had about six faintly distinct transverse [illegible] and was left with that. [illegible] 2" [illegible]

Terra del Fuego.

Canis. ..... a Dog was obtained from the Natives, which I saw on board of the Flying-fish and was struck with the similarity to the figures I have seen of the Esquimaux dog. It was rather below the medium size, had some peculiar habits was sufficiently playful, and barked very distinctly. It is now on board the Relief and it is to be hoped may reach the United States in safety. I am not aware that any figure was taken, though well worthy of it.

v. g. Rodentia ..... near Mercions, but according to accounts the fore legs must have been too short, and the tail was naked. — Two specimens were taken in traps but both had been [illegible] so as to render it impossible to preserve them. — The Fuegians called it a Squirrel, even by the Esquimaux, it is [illegible]

Auchenia ..... Skins of a Guanaco were worn by the Indians at Good Success Bay, seen by the Relief but not by the Vincennes, nor was any of the Straits of Magellan. —

Otaria ..... On this is one of the Cruising grounds of the [illegible] from Longitude 80 to 90 of these Animals was seen during our stay, that I am aware of.

Delphinus ..... a large School of Porpoises was supposed as having been seen on the night of the 22 August, which [illegible] off Cape Gregory, the Most [illegible] at Fuego. — Delphinapt.?

Balaena ..... According to Mr. Courthouy Whales would sometimes come up to the Kelp, on the outer side of Burnt Island. —

Delphinapterus Peronii. — Was taken off the Western Coast, in Lat 50°. 35' (see Note book p. 38)

Delphinus cruciger. 2 & 9.? — Came under our bows off the Western Coast, in Lat 52°. 15 (see Note book p. 37)

Birds.

Cathartes aura. — The Turkey-Buzzard — seen in the Straits, [illegible] — I could not distinguish this from Siberian Specimens, or from the Common bird of the United States. — Two specimens were shot from the Relief. — Orange Bay.

Polyborus Brasiliensis. ..... The [illegible] figured are in Books view of the Western Coast. — Abundant in Straits of Patagonia. Seen also in Chile & found by Mr. Audubon in Florida. — One specimen [illegible] coast, each and both with fine

[illegible]

transverse lines. – Orange Harbour.

Circaetus? ..... all blackish except tip of tail with narrow border of white. Some white spots at base of Quill-feathers; rump-feathers, thighs and under parts of wing, mixed rufous; feathers of head striped with brown. – Not from the Beagle. – Orange Harbour.

Circaetus? ..... or Falco, a large brown falcon in great high bay, orange bay and pointed, 1st primary very short, 2d rather longest. – Ground colour all over rufous, spotted with black and white; tail above, grey & pure. – Orange Harbour.

Daptrius ..... The small Hawk seen at the Rio Negro and which usually eats fish – not from the Beagle – but many specimens seen here. – Orange Harbour.

Milvulus ..... seen near Bahia Blanca – Throat dark, with white stripes; breast and belly inclining to ; tip of tail blackish; back and upper part of wings brown. – Orange Harbour.

n.g. Merulaid ..... bill sharp-pointed & slightly curved. Size of Thrush; general colour Olive-brown, with white stripes on throat & breast, white spot on ear & throat; the two outer tail feathers tipped at tip. In flight shows a ray on base of the wing. – Feeds in the bushes, hopping actively in the crevices of the trees, and on the ground, or on the beach. – Orange harbour, & Nassau Bay. –

Sylvia? spinicauda Lath – Notwithstanding the form of the tail this bird has all the habits of a Warbler, and was not known to climb. – It hops on the ground in coveys, flitting from bush to bush, exactly in the manner of some of our gregarious Warblers. – Not uncommon about Orange harbour. – Synallaxis Lesson, ornatus

Troglodytes ..... dark-coloured – pretty common, creeping in the crevices of the rocks, near the shore – Orange harbour.

Luscinia ..... form or flight during the day of the Nightingale.

Fringilla ..... near sp. from Peru – rusty spot on back of neck – tail generally without rest. – Obtained by M. Hicks at Orange Harbour. on few places.

Hæmatopus "niger Linn": – plumage all black, but brownish tinge on back of wings and back: – rostrum small, – "bill dull orange, pink at base, yellow at tip" – Different to that in Europe.

Hæmatopus ..... all black, but mottled with fine rusty specks. Large "bill orange-red at base, yellow at tip; feet dark olive" (Byers) – Orange Harbour.

Ardea

Fauna del Mare.

[illegible] [illegible] [illegible] [illegible]

Halla [illegible] [illegible] [illegible]

Halla [illegible] [illegible] [illegible] [illegible]

Halla [illegible] [illegible] [illegible] [illegible]

Halla [illegible]

Puffinus [illegible] Large Shearwater; Atlantic, in S. L. 44° 30' and perhaps Pacific (see Note-book)

Halocyptena Wilsoni. - Atlantic in the Atlantic in S. Lat. 30° and upwards the same as in the Pacific, in S. Lat. 5°, & occasionally upon the Coast; also in the Pacific at times, & within a few miles of the Coast.

Thalassidroma [illegible] the white-breasted Species, first seen in S. Lat. 44°, 30' in the Atlantic. Rarely seen. Also, in the Pacific, on the west Coast, [illegible] procured.

Diomedea exulans. - This Species was first seen in the Atlantic in Lat. 40°; & occasionally after that, by day & night, & particularly in bad weather, & in sight of land. - Was rarely taken with the hook. - Also seen in the Pacific, on the passage to Valparaiso & Callao, & on the return passage, in the Atlantic, in Lat. 30° S. & 30° N. in thick drizzling weather, numbers were taken with the hook. - Would not, it was observed by some on board, as having occurred in their [illegible] on Whaling ground may account for their numbers. - This is evidently only a young of the Procellaridæ. (see Note-book)

Diomedea [illegible] With the above in S. L. 42°, in the Pacific, a single individual of a Black Species was seen, but would not take the hook. -

Diomedea * - [illegible] resembles exulans, but smaller. [illegible] eye; wings and back blackish, tail also; rump and vent [illegible] grey, [illegible] Fin. Till [illegible] land [illegible].

Sterna [illegible] red bill & feet - narrow; - top & back of head [illegible] & outer edge of primary wing feathers white, with a slight grey tint on the wings. - Another specimen was seen with the head and feet, probably young. - Common at Cape Horn.

Terra

Birds of Prey.

Larus ..... Inhabits sea; spotted and partially grey [illegible] bill black, [illegible] and at tip. [illegible] Orange harbour.

Larus minutus? — Apparently [illegible] Orange harbour.

Sterna ..... Black bill brown; [illegible] feet black. — A very distinct genus from Larus, and flights much more dissimilar. called "Sea tern" by the sailors, — [illegible] Orange harbour [illegible]

Haematopus ..... all black, except a white spot [illegible] on breast — young: [illegible] by all. [illegible]; the Black [illegible]

Carbo ..... [illegible] at the [illegible] at the angle of mouth — [illegible] at the angles of the mouth. — Very common at Orange harbour, and all seen by myself [illegible] Flight [illegible] young [illegible] the young [illegible]

Anas ..... distinct, and larger. Throat all white [illegible] bill, grey at the [illegible] Orange harbour.

Anser ..... all white; two knobs on wing; bill black; feet all yellow [illegible] broad and much [illegible]

Anser antarcticus, Vieil. — never following, but bill in dried sp. white; feet pale yellowish — "Help-Gans. Patagon."

Anas ..... "Duck" — larger than [illegible] throat white. Head [illegible] throat white, [illegible] neck [illegible] "Upland goose," by [illegible]; [illegible] but [illegible] young. — Common about pools on upland, sometimes accompanied by young. —

Ilha de Fuego.

Microptera [illegible] Sulz. A specimen of doubtful the sign of the [illegible] on the Portuguese Ship, but I could discover no specific difference; this had the tubercles on the leg; legs yellow & the tarsi, but the connecting web black. - Six yellow; with yellow, with black spot at tip." Here two Birds (not [illegible]) flew from "wing to wing, so possible in endeavouring to escape; and as I could not expect for a shot to conclude the [illegible] the wing or wings of the [illegible] flight. - "Dogs returned to the Ship [illegible] - None were done by myself, but several were procured during the stay of the Ship.

Anas "speculariodes - King - [illegible] water Museums at Orange Harbour "(Gould say)

Anas "crecoides." Specimen Black, with [illegible] with rusty before, white behind. - Orange Harbour. -

Reptiles

No traces of any Reptile, or Batrachian Animal [illegible] stay of the Expedition at or on Island.

Fishes.

[illegible] specimen was drawn at it's natural colours of the interior, [illegible] ing a new Genus. (see below).

This is the known Species not yet described of the Harbour; as [illegible] have been little examined; but these seemed little variety, and those obtained small dimensions, caught by the hook among the kelp found among stones in the water.

Terra del Fuego.

[illegible] - - - to II Drayt. - [illegible] both [illegible] [illegible] Body [illegible] - head broad and eyes in a [illegible] "Taken with the hook." - (fig by Drayton).

[illegible] - - - - to I Drayt. - resembles last in profile, but head [illegible] pointed and eyes in a less [illegible] "Taken with the hook & smaller individuals [illegible] (fig by Drayt.)

[illegible] - - - - [illegible] - [illegible] - [illegible]

Fauna del Lago.

Entomologia.

Blatta.

Forficula

Asilus

Ephemera

Simulia

Tipula

Crustacea.

Of the Crustacea of Tierra del Fuego little is known. Mr Darwin collected a few species on the shores of Tierra del Fuego, and Orange harbour, and the following list is compiled from his notes.

Hippomedon
Lithodes
Lithodes - - - - 2 sp. very large. Dredged abundantly from bottom of harbour; fragments on the shore
- - - - - - - - - 3 sp.
Cancer
Galathea
Athanas
Hyperia
* Calocaris Darwinii — Large — Common along the shore —
off Patagonia, Lat. 47° Long. 65° (Coast & Harbour
3 sp.
Gerardia
* Calocaris Darwinii - - - off Patagonia, Lat 47° Long. 65° (Bate & Henderson
* Cuneri. Darwinii. do do (Bate & Henderson
Philomedia
Epilys (Darwin)
Hyperia
Orchestia * Hyperalus Darwinii. common near Salt-Water - Orange Harbour

Worms &c. &c.

Gammarus — [illegible]

[illegible] — [illegible]

Asaphus — [illegible]
do do

Balanus — [illegible]
[illegible]
[illegible]
[illegible]

Analida — [illegible]
small, abundant in the Mucronata, found floating in about 5 fms.
[illegible]
[illegible] rubrum — [illegible] tuberculata in [illegible]

Annulata.

[illegible]

"Amphitrite — tubes [illegible]

"Chaetopterus — tubes of (Counthouy.) Arenicola
Cirrus — Ophelina (do.)
[illegible]
3? sp. O. limbosa (do.)

Amphitrite — [illegible]

Polynoe* scellata, Sars
Lumbricus* — Ophelina
"small; bright red - under stones on [illegible]

Terra del Fuego.

Mollusca.

Terrestrial species (Helices & Succineæ) were found here; but in general rare, and of small size, inconspicuous. No Fluviatile Mollusca were observed. [illegible]

[illegible] species [illegible]

[illegible]

Valvata. [illegible]
* magnifica, Phil. [illegible]

Helix * sarcalis, Couth. [illegible]
* lirata, Couth. [illegible]

Succinea * ovalis, Couth. — small; — one deciduities, [illegible]
Succinea: * inconspicua, [illegible] — [illegible]
Zonites * [illegible]
* [illegible], Couth. [illegible]
Pupa [illegible]

Proctus * [illegible]
* [illegible]

Littorina [illegible]

Voluta [illegible]

Monoceros imbricatum [illegible]

Buccinum: [illegible]

Ranella vexillum.

Triton [illegible] "Good success Bay (C. Pendleton" — very delicate; [illegible]
Pyrula clathrata [illegible] C. Pendleton [illegible]

Fissurella * [illegible], Couth.
* plicata. [illegible]
* gracilis, [illegible]
* [illegible], Couth.
* lavalleis, Couth.
Columbella.
Cristallina * cælata, Couth. [illegible]

Nassa tumidosa.
*
Clathrata [illegible] "Small — Straits of Magellan, [illegible]
"C. Pendleton" (Couth.)

Siguenzia * protensis, Couth. [illegible]
[illegible] 2nd sp. — do. —

Genera des Auct.

Cardiopteris

Conopteris

Pecopteris [illegible]

Asterocarpus

Sphenopteris * latifolia [illegible]
* acutiloba [illegible]
* antiqua [illegible]

Rotula cymbiformis [illegible]
- - - - dimorpha [illegible]
flammea [illegible]

Taeniopteris * [illegible]

Odontopteris * varians [illegible]
[illegible]
* Castanea [illegible]
* viridula [illegible]
* pumicea [illegible]

Cordaites [illegible] described from the Coal Measures [illegible]
do - do Shale -

Noeggerathia

Nevropteris * subcordata [illegible]

Anomites? [illegible]

Myelites Aegyptiaca

[illegible]

*Stems [illegible]

Unrolled [illegible]

Vimen de Attala [illegible]

Terra del Fuego.

Mustela edulis Gm.

Ursidia . . . . . Wiegm. Archiv f. Naturgesch. 1837. I. p. 52.
* *fuscolutea* Licht. Verz. d. Doubl. p. 84. n. 330.

Canis . . . . . aegre distinguendus a Cane familiari et Dingo.

Aegotheles : . . . . . Gould Voy. Beagle p. 111.

Reptilia.

Vera in Archipelago . . . . . Gaud. Voy. Bonite, Zool. III. p. 151.

Coluber * *Wilsii* Gray Ann. of Nat. Hist. I. p. 11. . . . . Gaud. l. c.

Coluber . . . . . Gaud. l. c.

Proctotretus * *tribulosus* Bell . . . . . Gaud. l. c.
* *fuscus* Gaud. l. c.
* *Darwinii* Bell . . . . . Gaud. l. c.
* *Wilsii* Bell . . . . . Gaud. l. c.
* *Gaudichaudii* Bell . . . . . Gaud. l. c.
* *fuscus* Bell . . . . . Gaud. l. c.
? *Wilsii* Gray . . . . . Gaud. l. c.
? *Darwinii* Gray . . . . . Gaud. l. c.

Bufo Darwinii Bell . . . . . Gaud. l. c.
* *Wilsii* Bell . . . . . Gaud. l. c.

Pseudis . . . . . Gaud. l. c.

Rana * *Commersonii* Gaud. . . . . Gaud. l. c.

Bufo * *Commersonii* Gaud. . . . . Gaud. l. c.

Hyla * *Commersonii* Gaud. . . . . Gaud. l. c.

Bufo * *valdiviana* Gaud. . . . . Gaud. l. c.
* *Commersonii* Gaud. . . . . Gaud. l. c.
* *rubella* Gaud. . . . . Gaud. l. c.

Chili.

[illegible] mountains; in the midst of which is situated the small city [illegible] of the province of Coquimbo, and the port of [illegible] approachable at most seasons, and distant [illegible] all the way between it by mountains and valleys. The small city or town of Coquimbo [illegible] high ridge of the mountains [illegible] which [illegible] the city of Coquimbo. The mountains [illegible] more distant than one day's ride, but the ground between the two and the sea [illegible] at all points. — The [illegible] of the mountains [illegible] being known in general terms as primary rocks, [illegible] the [illegible] which [illegible] at this point.

Geological Observations.

The Granite district [illegible] rocky hills [illegible] of the [illegible] formed [illegible] the Granite district [illegible] the Granite [illegible] the Granite [illegible] generally a very homogeneous [illegible] of primary and metal-bearing veins [illegible] at this point [illegible] stamp it [illegible] gold.

The [illegible] at this point [illegible] as we have seen it to be [illegible] contains [illegible] by us in the Granite [illegible] no Granite. [illegible] time used at that point [illegible]

We observed here, as we have done in other [illegible] in situ; even although, and [illegible] very distinct [illegible] was the formation of a pseudo-breccia or apparent conglomerate, where the bank had been cut down to form the road, in two or three places. [illegible]

[illegible]

[illegible] [illegible] [illegible] [

15 miles south of ... material to afford additional evidence. Chili is all ... for ... to make it worth while that ... to be placed during one day. —

Climate.

The Climate is to be said for part, ... cultivation, except by artificial ... irrigation; — and it is said that the Coast, ... all ... Countries, ... the appearance for both ... and ... —

The ... is very dry, light, and pleasant during ... It did not ... in the ... of ..., ... the ... and ... ... The ... were ... and the hills ... green, while ... in the ... the ... were ... brown appearance. — We have ... -pears to be the fact, ... that ... —

We ... Capricorn in the ... April, ... that the ... with us and just prior to the ... the "Dog Days" ... we ... perfect, we had ... , which was ... at ... the ... the ... ; the ... ... and ... the same ... ; clouds, but ... ... the ... day. The ... ...

At Santiago, situated perhaps the elevation of 2500* feet, we did not ... marked change in the climate — if anything it was dryer and colder — but ... What ... with cold weather were not uncommon during the winter, but ... inured to ... of ...

The ... with the ... we ... the ... the ... the ... Coast in the ... at Santiago, but dryer and more ... in the same manner it lay in patches about the summits, even the highest Peaks of ... presenting bare places. — From the appearance of things we can hardly think that it ... rains in these elevated regions, otherwise we are at a loss to account for the ... true glacier. — We now ... that ... to ... the Tropical Cordilleras, "So that it was difficult and ... it". —

* According to ... geography. —

Chili.

Opportunities for Observation.

April 12th. — Land discovered this morning at a distant apparently inland five or six miles but we soon lost sight of it; we it was calm and foggy all day. — Soundings in 80 fathoms. —

April 13th. — We were called early this morning to look at the appearance produced by the distant land, before dawn. — It rather resembled a fleecy cloud, as it was first the last of the new moon. The appearance gradually faded as the sun rose, and we soon lost sight of the mountains themselves. — Being off the harbour of Valparaiso. Mr. Underwood was sent in with a boat, to endeavour to procure water. — Towards evening a couple of boats came off from the shore, bringing on board an Officer of about rank, with whom we got on board, but being unprepared for the "Ship" kept lie with head sails to the wind.

April 14th. — Mr. Underwood returned, having made satisfactory arrangements about anchors, but it being calm all day, we were unable to get in. —

April 15th. — This morning came to anchor in the harbour of Valparaiso. — In the afternoon went on shore, and took an excursion among the heights back of the city, from which I did not return till late in the evening. —

Valparaiso is a considerable town, containing it is said upwards of 30,000 inhabitants, but it does not have the advantage of a large proportion of the houses being erected in the boarding system. With the exception of the buildings on the principal street, two churches and a few other public buildings, the houses are mostly of one story, and slightly built, the outer walls of adobe and roofs of tiles. The streets are neatly paved and supplied with a narrow boarding path, leading up the steep and difficult ascents on which so many of the houses are built — that is, on the East, for the northern portion of the city is situated on a considerable space of level ground. — We observed a considerable mixture of Indian blood, but by no means so general as we had been led to anticipate, and White blood is evidently getting the upper hand, as in all the sections we visited. We did not see above a dozen in the whole of our stay. According to the statements of the city is very prosperous, and increasing rapidly every year. — The English and French are becoming very numerous, and there are also many Swiss & Germans.

April 16th

April 16th — Went in company with Messrs Breckenridge, Dana & Rich, along the coast, north of the City, to "Villa la Mar" about 6 miles distant. — Parted from my companions and rode up the Aroma about 2 miles but not meeting the remainder of the party returned to the sea-beach and finally to the city, about sunset, late in the evening. — The hills we passed over to day were composed of granite & trap rock, attaining 400 or 500 feet. —

April 17th — Went in company with Mr. Breckenridge over the high land back of the city, to a ravine perhaps 2 miles north; not returned in the evening. — Left my horse during forenoon at a farm house that I should not ride for the boys, on mule or carriage to ship to the Coast Towns & start the following morning. —

April 18th — Left Valparaiso at 8 A.M. in company with Messrs. Rich, Breckenridge, and Dana, in Le Chaunt, the usual way of travelling to Santiago; not quite 40 miles distant. The road is a good road for wheel carriages, leading to Santiago some distance to the Northward. — Each rider was accompanied by an arriero, who took upon himself all the trouble of living; and carried a small amount of provisions prepared by the persons in charge — The way out for the first hour is thro' "steps" being cut out of banks. — On the hand they were much as settled in steep ascents, there being from three horses attached to each chaise. —

The national dress of the Chilians consists of the Pantaloons and the "poncho" the latter modelled after the Indian blanket, with a hole in the centre for the head. The horsemen wear spurs of most formidable dimensions, and as obtrusive to the ear as to the sight; which, joined with the huge carved wooden stirrups, are anything but agreeable to one inured to quiet: they ride however extremely well, — and the wooden stirrup is much more safe than ours. — On all this route we were constantly meeting large two wheeled Wagons, drawn by 3 pairs of oxen, yoked by the horns; and as it is not customary to grease the axle, we were never at a loss for music.

Reached Casa Blanca, the first stopping place, about 12 M., where we remained two hours and then continued to Concon, 6 leagues further. As there is no Public House between this and Santiago, we were found to remain here for the night; but we had time to make a short Excursion before dark. The banks of the Aroma we found of the same nature as those near Valparaiso, and the vegetation did not differ materially, so that we did not add much to our Collections. — Our accommodations for the night were excellent, vastly superior to what we had experienced in Brazil. —

April 19th

April 19th — We were called at 4 a.m., to continue our journey, and about sun-
-rise we reached the high mountain ridge, in passing which we were told the road took thirty-
-six turns within a mile, and descended, which brought us to the extensive plain through which
flows the river Aconcagua, and on which Santiago is built. — It was only near the City that we
began to see signs of cultivation, when the river came out of the mountains, the water being
sufficient to irrigate but a very small portion of the plain. — The country we had passed
through, all the way from Valparaiso was known to be rich, the proportion capable of
cultivation being very small indeed; and the houses were very thinly scattered, except at
the small villages of Casa Blanca and Curacavi. — We arrived at Santiago before 12 m., and
put up at the English Hotel, kept by a Mr. Gordon for we found a list of Americans were here.

We were aware that Santiago is the Capital of Chili, but were totally unprepared
to find such a City away in the interior, for surpassing not only Valparaiso but every in-
-land town we have in the United States. — The streets are broad and well paved, a-
-bout eight with the gutter in the Centre, and very generally run at right angles. The Chil-
-dings are large and showy, and generally in very good taste — several of them are splen-
-did specimens of fine proportions — indeed [illegible]

[illegible]

[illegible]

[

[illegible] the river for the main road. We visited a town [illegible] on the hill, and returned in the evening. Our success in the way of plants was not very great, though we made some accessions. — The Cordilleras were very imposing as seen from Santiago, especially when at sunset [illegible] and the innumerable ridges and peaks [illegible] of the Shadows. We attributed the colour to the constituents of the vegetation, it is little below it—but all changed to red! — We at the same time noticed a green tint in the sky, and occasionally afterwards, which we do not remember to have observed elsewhere. In the evening we made arrangements for a trip to the snow, [illegible] especially in procuring a specific immunity to the rabies. —

April 2d. — Up at 4 A.M. and were soon on our journey in the same chaise which brought us to the City. The Zodiacal light was very distinct this morning. We kept the road along the river for about 2½ leagues when we crossed and travelled among the hills to the Westward. After proceeding in all about 5 leagues we reached the point where the Snow-carts, for the supply of the City, are loaded. It was necessary to [illegible] in order to travel as we had done the day before, we learned there were at least seven. The ascent was gradual but very constant, and we saw nothing of the frightful ravines we had met with at Prudencia. We soon reached the middle region of the Cordillera, [illegible] of the Cumanchua and other low spiny plants, which is clearly indicative of increasing Aridity. Our route was up a mountain valley, and from the surrounding heights the Guanacos were scudding as in great numbers, their voice somewhat resembling the neigh of the "Pastrana colt" or "donkey" as it is called by boys. They with the [illegible] one of these elevated districts, as their skins and flesh are but little valued, and the [illegible] they inhabit is [illegible] for the support of their animals. They [illegible] and we saw [illegible] from the [illegible] in the [illegible]. —

We reached the head of the Valley at noon. Here Mr. Breckenridge [illegible] so unwell that he was unable to proceed, which was very unfortunate for our collections — Mr. Rich had been an invalid for some days, and concluded also to return. Mr. B. and myself kept on, with the guide. Half an hour brought us to the crest of a ridge [illegible] South-eastern flank of which we kept for the remainder of our journey. The aridity most

it presents a fine opportunity for ascertaining the lowest limit of perpetual snow in this climate, the exposure being to the Southward; and we had to regret the absence of instruments. One of [illegible] according to Mr. Hamilton's calculation, could [illegible] the Mercurial, and the highest point of the Cordillera opposite must have been [illegible] Our guide said that it would take 24 hours to go there, notwithstanding that we were near the head of the Mining ravine. — This circumstance [illegible] Ancoancagua of great height with Chimborazo, and we feel confident that it will be found to bear a pretty close comparison.

April 21st. — We started on our return before sunrise, as there were some Mules missing, & we should have [illegible] Steps. — A little before we [illegible] Snipe family, but there was not sufficient light to determine. — We [illegible] prevented their descent; [illegible] and all the [illegible] figure of 8. — We observed the same bird at the [illegible]

The [illegible] Cordillera [illegible] Opposite, did not vary materially from the form as seen from Santiago in point but we only seen more in detail, and under far greater advantages. The outline was not very unlike some views we have seen of Mt. Blanc. Mt. Dana took a SE bearing in the upper. The accompanying [illegible] made out from memory and will only serve to give a very general idea of its shape. —

I myself proceeded in front, and my Companions [illegible] Mr. Darwin [illegible] path till we had nearly reached the [illegible] Cobija when we left [illegible] Upon this I cried out, [illegible] Darwin was desirous of examining the rocks, accordingly we sent on the guide with the horses, and made a "detour" to the [illegible] the valley by a different path. We soon found the [illegible] long before it became rather inconvenient [illegible] in addition to their inconvenience [illegible] had to pass from winter to summer in a very few hours. Slept on [illegible]

* Note. The Mountain [illegible] we were subsequently informed is called "Llullaillaco".

were ready to be met with. — At the first point I reached I thought I would [illegible] Coast but it proving to be a continuation of the main [illegible] myself first properly visited; this I effected till I reached the Star Mount. Here I spent very day and [illegible] it, being led on by finding various interesting plants as the Thysanolæna and Cardiospermum &c, and the more luxuriant appearance of the vegetation. [illegible] at last reached the River that I went to when I first arrived, and crossed the adjoining ridge a second time; arriving at the old rude in the evening.

April 25th. — Went over to the Coast a little beyond the Lighthouse. This is just across the [illegible] which is called Hospital Point, and is [illegible]

April 26. — Monte; [illegible] I did not make myself known to him the first time we met, but the next day I accosted him, and upon the [illegible] over the hill. He very kindly assisted in obtaining several plants in particular [illegible] and very good [illegible] the time, by which [illegible] [illegible] [illegible]

Spanish and English, as well as the testimony of the inhabitants, establish — that the language was in the same in this part of the world. — The ground plan is very properly in all the arrangements — the Chiefs houses were at either end — the town for persons of regular habits, viz. at 9 o'clock A.M.; and although W. [illegible] numbers; the trials were favoured, the Missionaries were confirmed, so that the exchange took place. The Affair broke up with some [illegible] and ended in a procession through the streets, which I was sorry to see [illegible] of the Chiefs and each party went off. Bread will be sent with the Dispatches.

May 1. — A slight breeze having sprung up, towards evening, the Boats were hoisted under, and sailed from Matavai.

Vegetables.

A glance at the vegetables was sufficient to show that the climate was [illegible] with few forests; though the latter did not appear [illegible] as in the Tropics — There was a total deficiency in the [illegible].

We had arrived at the most favourable time for the fruit and vegetables to the Commencement of Winter. — The Annuals were entirely [illegible] and nothing of them was left but the Stems and the bottom [illegible] which according to all appearances must [illegible] — But as our Medicine Chest [illegible] for some Confections in addition.

At first we were disposed to think that [illegible] wooded districts, but after a few days we learned where to look for them; viz. under Shrubs and in [illegible] places, where running water — and in the [illegible] tations we made our richest harvest of Mr. presents.

The Botanist is shown with the [illegible] may be disposed to attribute it to the [illegible] Cocoa — the Bromelias, all terrestrial, and Cactis, were conspicuous objects long before landing; — two Scarlet Leranthi, a Palm (Fuboea), a dwarf Bamboo (Schizostachyum), a Schizostachyum, and Acacia, the abundance of the Myrtaceae, perhaps the Boerhaavia and Oxalis, may serve to confirm this idea; — but excepting these, there is not [illegible] the Tropical in the Vegetable Forms as in any part of the Globe within the Latitudes.

Chili.

Nov. 8; The highest part of the ridge we passed was [illegible] — with scattered [illegible] trees & [illegible] shrubs growing [illegible] The shrubs may vary in height from 4 to 9 feet; they consisted chiefly of the Asteraceæ: Lindleja, a shrubby Lobelia with long scarlet flowers, the Puya, Gaudichaudia Gil[illegible]lia, 3 or 4 species of Baccharis, a Calliguaja, on which was growing [illegible] a fine scarlet Loranthus, the [illegible], a Mutisia, the Calceolaria integrifolia, the fringed flowers of the swamp — the small Polygonum hydropiperum, covering [illegible] a dark red. — Among the more conspicuous were the tall [illegible] a Bromelia and a columnar Cereus. Of more humble plants on this dry declivity we [illegible] a Portulaca almost stalkless with sweet scented [illegible] a single flowered yellow Oxalis which seemed almost leafless, two Dichondras, Isnardia [illegible] a minute Hypoxis, and the two species — [illegible] "Pandaniform" leaves of a large Eryngium. — At a different season we were told that these [illegible] were covered with the Nasturtium flowers; the irrigation; and the [illegible] of which we saw visible. The showy flowers & the appearance of the [illegible] the inundations,

&, with the remnants of which we were surrounded [illegible]

It was now in the narrow highland ravines, continuing [illegible] the mistletoe and cypress at least a few miles. Here we found the Calceolarius, Eupatorium glechonophyllum, Galium, Loasa Hypericum &c; [illegible] a bright red Jacaranda, & on the hills

&c &c; next came a woody Vine, a fine leaved Cissus. In such situations we found the Drymis and Fuchsia macrostemma; & in one deep ravine 3 miles south, the Bloxydendron and Sandixabala.

In the valley near the head of the Rio, as at "Villa de Maur" and [illegible] illus", some variation in the [illegible] appeared & the Cupressus [illegible] Erect in the distance for Cedrus, the stems of the Drymis [illegible] in form & color resembling those of Brasil; — here also was abundant a large-flowered Cassia, sometimes attaining the height of 15 feet with a trunk of 6 inches — a tall shrubby Eugenia? [illegible] bearing almost the habit of a Dodonæa, — the Aristotelia, also a tall shrub, as well as the Psoralea glandulosa

and

– and among the handsomest plants, a tall branching [illegible] grandiflorus –

– and occasionally the [illegible] (Quinoa).

– the dry fir-like leaves of the [illegible] (Adelgaitha), and the [illegible] bundle of [illegible].

Among the [illegible] Mussaenda [illegible] Psychotria [illegible] Rhamnus [illegible] Myrtus [illegible] Psoralea [illegible] Baccharis [illegible] Verbena [illegible] Solanum [illegible] Wahlenbergia [illegible] Oenothera [illegible] Bromelia [illegible] Eryngium [illegible] Plantago [illegible]

Palms are only seen in the [illegible] and [illegible] in all, [illegible] with a diameter [illegible] of fruit and [illegible] the leaves [illegible]

In the above the English did not differ materially, except that [illegible] varied – the upper [illegible] the lower the [illegible] The [illegible] Europe and [illegible] the colour [illegible] disappeared altogether, as on the plateaux back of Valparaiso [illegible] at Santiago – the first-mentioned plant at the time [illegible] other yellow [illegible] Santiago the Acacia Caven became the [illegible] took the place of [illegible] common and [illegible] their appearance. The Myrtaceae [illegible] found [illegible] leaving [illegible] from the branches give it a [illegible] [illegible] the dimensions [illegible]

for an [illegible] of the [illegible]

[illegible] the [illegible] [illegible] [illegible]

cactus, tall in proportion to its breadth with deep branches; growing to the height of [illegible] with a trunk that is diandra. — In the bogs in spring the vegetation was more than usual rich & singular and chiefly remarkable for the great superfluity of the Oxygonum Mun[illegible]. [illegible] some scarce Fungi, with specimens of; and we also noticed an Epiphytic composite (Polyspadium?) — the [illegible] Barbier (Chiliense) [illegible] [illegible] [illegible]

Chili.

Filices of Chili [illegible] except the [illegible] Willow. [illegible] Families [illegible] arranged in the following order —

1. Ranunculi.
2. Gramineæ.
3. Leguminosæ.
4. Julifloræ.
5. Rhinanthaceæ.
6. [illegible]
7. Myrtaceæ.

and the Mimosæ [illegible] Cruciferæ; Cistineæ; all the Malvaceæ; Aceræ; Oxalideæ; Rutaceæ; Escalloniæ; Umbelliferæ; Pomaceæ; Cucurbitaceæ; Solanaceæ; Gentianeæ; Labiatæ; Scrophularineæ; Caprifoliaceæ [illegible] Valerianeæ; Compositæ; Cichoraceæ; and Campanulaceæ.

The smaller Cryptogamic plants, the Lichens, Fungi & Mosses, seemed all scarce; though it is true we did not pay any particular attention to them. We observed on one occasion a circumstance similar to what was noted in Brazil, viz. Lichens growing on the leaves of the Ruizia

Absent — In all our Chilian collections we notice the absence of the following Families, in addition to the usual Tropical Forms —

Araceæ.	Melastomaceæ!	Gentianeæ!	Aroideæ
Nymphæaceæ.	Cucurbitaceæ!	Convolvulus	Typhaceæ
Capparideæ.	Passifloreæ.	Lentibularineæ	Marantaceæ!
Cistineæ.	Droseraceæ?	Proteaceæ!	Eriocauleæ
Violineæ!	Saxifrageæ.	Thymeleæ.	Lycopodiaceæ.
Droseraceæ.	Araliaceæ.	Scitamineæ.	Gramineæ!
Tiliaceæ.	Cornaceæ	Nymphæaceæ.	
Terebinthaceæ.	Caprifoliaceæ	Myrtaceæ.	
Hypericaceæ!	Ericaceæ!	Pontederiaceæ.	
Aceraceæ.	Myrsineæ.	Alismaceæ.	
Sapindaceæ.	Ebenaceæ.	Smilaceæ!	
Rutaceæ.	Oleaceæ.	Hypoxideæ.	

Birds, Ferns, the Umbelliferæ are absent, except the Willow; the Coniferæ, except the Cupressus; the Rubiaceæ, except the Galium; the Cactaceæ, except one very [illegible] species.

We notice also the family of the Malvaceæ and Cyperaceæ; and Primulaceæ, represented only by Samolus and the Anagallis.

Cultivation. The markets at Valparaiso, Santiago, abounded in fruits, all known of Europe as climates, except the Orange & perhaps the Banana; the plant was seen but Valparaiso but not bearing fruit. Grapes, dessert, wine, are chiefly cultivated for the table; though a table wine is obtained in considerable, not much to the taste of our Countrymen; the "vinos" became more approved. Figs. also were in perfection, and the fruit is abundant and the best article inferior. — Olives were seen in fruit at Santiago. — Pears & Quinces are in market. — The Peaches are rather celebrated, but we thought them inferior to our own; and the Apples, such as we tasted decidedly poor. Walnuts, Palm nuts, ... Indian Corn was cultivated, but not the "yam" that is cultivated. — Vegetables were also abundant, as Potatoes, Pumpkins, Fennel, ... were a little surprised at seeing in the Markets of Santiago, bundles of a tree weed (Tweedia) brought up from the Coast; the same that was so abundant at the Coast of Rio de Janeiro, and proved so noxious to the Cattle. . . . . days. Something was said about its being an approved article; but in our . . . . . by planted about Santiago, and the Climate seems to suit it as it was . . . . flourishing there with us. — A Willow was also planted for Ornament. . . . . Among Weeds we noticed the Xanthium spinosum extremely abundant; but were struck with the absence of the . . . . (Nicotiana glauca)

. . . . . Of the wild fruits naturally growing, the Lucuma (Lucuma obovata) only Valparaiso, Quillota and the Coast. . . . . are found which are useful for various Oeconomical purposes. . . . . we understand that the Juice of the fruit yields a Saccharine . . . . fruit of the Peumo (Cryptocarya?) was in market in great . . . . and we had no opportunity of tasting it; it abounds excessively in . . . . and perhaps as oil might be obtained from it to advantage. — The Puelki (Gynneria Scabra) does not seem to be much esteemed, but is used by the poor as well as . . . . made use, in the same manner as Rhubarb, which it much resembles. — The Quillaia

wood (Quillaja) it is well known is used as a substitute for soap in washing; the plant is abundant near Valparaiso, and a decoction of it is employed for the purpose. — The Lucuma is common near Valparaiso (Mr.). The Chusquea, or Native Bamboo (Chusquea), which are found in the interior of Chili, are also found on the Andes, but is replaced in the interior of Chili by the Cane; and the Cane also is generally employed for the same purpose near Valparaiso, but is considered to be preferred for Medicine. — There is a species of Cactus which is found in the interior of Chili, but is not found near Valparaiso, which is a species much used in the preparation of Chili Leather.

List of plants collected between the Coast at Valparaiso and the Elevation of 3000 feet on the Cordilleras

Ranunculaceae

Ranunculus Chilensis — near Valparaiso but not abundant — Oct. &c.

Papaveraceae

Argemone Chilensis — highland ravines at Valparaiso

Bocconia arborea Mart. — Near the shores of the Pacific, with large, white flowers — Juice orange-coloured; fruit large, pear-shaped, smooth, 2-celled, many-seeded — Valparaiso

Argemone grandiflora — mouths of rivers near Coast &c. &c.

Corydalis — probably undescribed — flowers yellow with purple tips; not found near Valparaiso

Cardamine Chilensis — Near the banks of the streams in the Cordilleras at 3000 feet elevation — not found near Valparaiso —

Nasturtium Gayanum? — height from 1 to 2 ft. flowers white —

Viola — stem 1 foot high, smooth, leaves glaucous, lanceolate, entire; stipules long, setaceous; flowers white, small — Valparaiso

Polygala — Near the banks of the streams in the Cordilleras at 3000 feet elevation — not found near Valparaiso —

Polygala Gayana? — height from 1 to 2 ft. flowers white —

Polygala Chilensis — stem 1 foot high, smooth, leaves glaucous, lanceolate, entire; stipules long, setaceous; flowers white, small — Valparaiso

Chili

Convolvulus . . . 20 and 5 or 6 yoga; fol. slender herb., corolate, entire — two three rarely, 5 l
Colletia . . . tall if espinous; no leaves; fl. white or in pairs. Common in dry as well as wet, alps &c.
. . . . . undergo same; fl. white; fl. Chili. — Calif. —
. . . . . fol. small with [illegible] Chili fl. [illegible]
. . . . . ? A entire obtuse pubescent, [illegible] — Chrysanthemum coronaria [illegible]
Condalia? . . . . . shrub. 8', [illegible] thorny [illegible] — valley beyond town to sea, shore [illegible]
[illegible] . . . . . ; seeds; capsi. 2-valved; Ornamental tree 20 to 25 feet — Slender, pendent branches — [illegible]
. . . . . ? . . . . . capsi large red or white; fl. [illegible] ment. glume. blue [illegible]
Aristotelia maqui . . . . . Shrub, 10 to 15 feet, few straight branches — common at [illegible]
Ilex? . . . . . Shrub, spiny leaves — once only, 10 miles S. of Valp.
. . . . . Tree 30 ft. by 1 ft. — fol. broad-ovate, entire, Coriaceous — Mountains ravine 12 mi. [illegible]
Rhus? caustica, Hook. — fr. compound, but not "flabellate"; fol. entire, smooth like Cotinus; shrub 6-12 ft. — base of [illegible]
. . . . . [illegible] fl. [illegible] — A. Maurina Sandwich Islands. Ranch.
Drimys? . . . . . [illegible] fol. petiol. [illegible] — [illegible]
. . . . . [illegible] [illegible]; shrub 20 ft. — or 3 feet [illegible]

Sophora macrocarpa, Smith — Ornamental shrub with [illegible] — subspecies in [illegible]
[illegible] . . . Highland ravines Valparaiso.
Melilotus . . . . . [illegible] — A. [illegible] — [illegible]
[illegible] . . . . . shrub 6 to 10 ft. — Cultivated [illegible]
Convolvulus? . . . . . Low 2 seeded; [illegible] — [illegible]
. . . . . [illegible]
. . . . . ? . . . . . Corolla; [illegible]
Robinia? . . . . . [illegible]
. . . . . ? . . . . . [illegible]

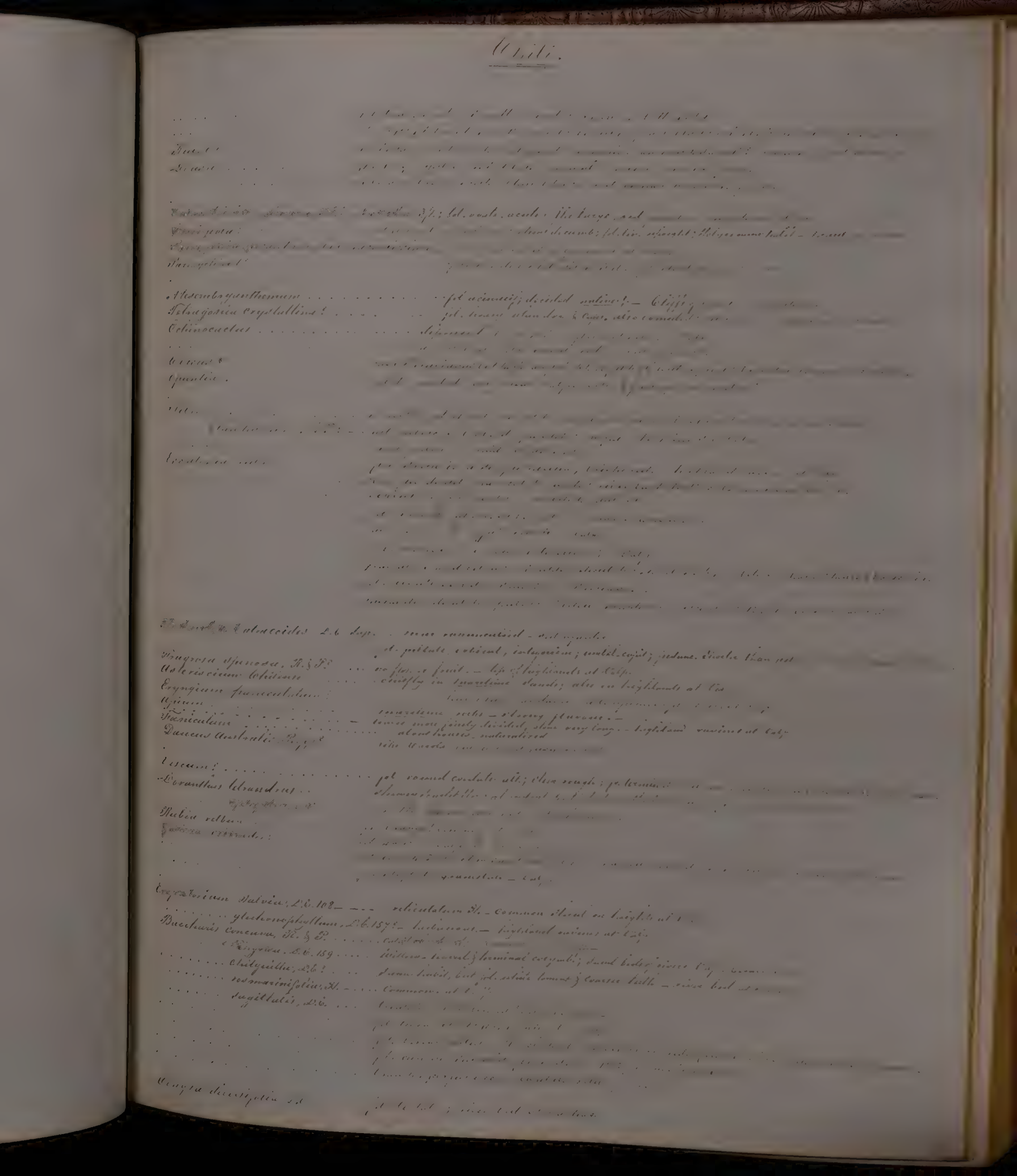
Adesmia microphylla, Hook. — [illegible]
. . . . . [illegible]
. . . . . ? . . . . . Shrub 6 ft. [illegible] — [illegible]
Vicia? nigricans, Hook? . . . . . Decandrous, 12 to 15 ft; foliol 11; leaves tetra- tendrill — road to the Luquillas.

[illegible] . . . . . near Magellanicus. — [illegible]
Lupinus microcarpus [illegible] 2 to 3? — Valp.
Acacia Cavenia, Arolena . . . [illegible] but pod inflated, rigid; [illegible]
Cassia . . . [illegible]
Leg. . . . . [illegible]

Hagenochia Oblonga, H. & A. . . . [illegible]
Zuccagna [illegible] . . . [illegible]
Marginicarpus . . . [illegible]
Acaena . . . [illegible]
Mosaic? . . . [illegible]
Fuchsia [illegible], H. & A. . . . [illegible]
. . . . . microstemma, H. & A. — [illegible]
Epilobium . . . . . [illegible]
Oenothera [illegible] . . . [illegible]
. . . . . nodiflora? . . . . [illegible]
. . . . . tenella, Cav.? . . . [illegible]
. . . . . [illegible]

Godetia . . . [illegible]
Passiena . . . [illegible]
. . . . . [illegible]
Myriophyllum . . . [illegible]
. . . . . [illegible]
Callitriche . . . [illegible]
Lythrum . . . [illegible]
Eugenia leptospermoides . . . [illegible]
. . . . . * . . . . . [illegible]
. . . . . Chekan? . . . [illegible]
. . . . . [illegible]
Myrtles . . . [illegible]

Umbelli.



. . . tinaris Lam.

Compositae

Asteraceae

Argylocaulon [illegible]
Baccharis [illegible]
Erigeron [illegible]
Haplopappus [illegible]
Senecio [illegible]
Solidago [illegible]

Compositae

Cruciferae

Lepidium [illegible]

Cyperaceae

Carex [illegible]

Ericaceae

Gaultheria [illegible]

Gramineae

Agrostis [illegible]
Bromus [illegible]
Festuca [illegible]
Poa [illegible]

Hydrocharitaceae

Elodea [illegible]

Iridaceae

Sisyrinchium [illegible]

Juncaceae

Juncus [illegible]

Labiatae

Stachys [illegible]

Leguminosae

Adesmia [illegible]
Lupinus [illegible]
Trifolium [illegible]

Liliaceae

Alstroemeria [illegible]
Bomarea [illegible]
Calochortus [illegible]
Leucocoryne [illegible]

Loasaceae

Loasa [illegible]

Malvaceae

Malva [illegible]

Onagraceae

Epilobium [illegible]

Polygonaceae

Rumex [illegible]

Ranunculaceae

Ranunculus [illegible]

Rosaceae

Acaena [illegible]

Rubiaceae

Galium [illegible]

Scrophulariaceae

Calceolaria [illegible]
Mimulus [illegible]

Solanaceae

Nicotiana [illegible]
Solanum [illegible]

Umbelliferae

Eryngium [illegible]

Verbenaceae

Verbena [illegible]

Violaceae

Viola [illegible]

Walkenbergia linarioides Lam. . . Cerro de Santiago.

Chili.

Chili.

Ulili

apiculata . . . . . a sort of thin-stemmed bell-bearer. - Common at Cape -

* *pseudoscilloides* . . . bell of Port. Elizabeth; a fine & white S. [illegible]

[illegible] . . . . . [illegible]

. . . . . all bell-bearers of the Cape

Muscarioides . . . . . [illegible]

Hyacinthus . . . . . a [illegible] 12 miles S. of [illegible] -

Urnea

Ramalinoides

Scilla floriformis . . . . in the [illegible]
. . . *proliferum*

2 Scilla regia; Hyacinthus.

[illegible] bell-bearers [illegible] [illegible] [illegible]

Chile.

[illegible] with [illegible] leaves; [illegible]
a Saccharum; two Festuca [illegible]; [illegible]
[illegible]

[illegible]

On the banks of the mountain streams, the vegetation is much [illegible]
[illegible]
region still [illegible]
banks and [illegible]

[illegible]

Trifolium [illegible]
[illegible]
Oxalis [illegible] — pl. rounded, blood-[illegible]; [illegible]
Erodium [illegible] — of [illegible] — 2 to 3 inches — frequent [illegible]
[illegible]
[illegible]
Senna? [illegible]
Cotyledon? [illegible]
[illegible]
Lycopodium [illegible]
[illegible]
Lilium [illegible]
[illegible]
Acæna? [illegible] — no fl[ower]. —
[illegible]
[illegible]
[illegible]
[illegible]
Oxalis [illegible]
[illegible]
[illegible]
Trifolium (bis) [illegible]
Medicinum? [illegible]
Valerianus [illegible]
[illegible]
Solidago [illegible]

Chile.

3. Upon Reincarnation & Will.

[illegible] [illegible] [illegible] [

Chili.

List of Plants collected on the Alpine region of the Chilian Cordillera on the mountain called "Du Yeso".

Cerastium . . . . . fol. ovalibus, depressis hirsutis – ad glaciem rara.
Cardamine . . . . . ? to Lauch. – ad glaciem rara.

Lagasca . . . . . Stipes, hispidi, foliis oblongis – ad glaciem rara
. . . . . Capitulum ; est Lagasca foliis ovatis subtus pubescentibus

Arenaria . . . . . ad glaciem rara.

Astragalus . . . . . Siliquis . . . ad glaciem rara

Adesmia . . . . . Caules . . . foliis . . . ad glaciem rara
n. g. Leg. . . . . Affin Adesmiae foliis oblongis . . . ad glaciem rara

Mutisia . . . . . ad glaciem rara
Gen. nov. . . . . Capitulum radiatum. Gen. nov. affine Mutisiae – ad glaciem rara
. . . . . Capitulum radiatum affine Mutisiae – ad glaciem rara

Senecio . . . . . Caules . . . foliis . . . ad glaciem rara
Arenaria . . . . . foliis . . . glabris, ad glaciem rara

Verbascum acaule? – Caules . . . foliis . . . ad glaciem rara

Eriocaulon? . . . . . ad glaciem rara

Astragalus . . . . . Caules . . . foliis . . . ad glaciem rara
n. g. Leg. . . . . Capitulum . . . ad glaciem rara
Gen. nov. . . . . Capitulum . . . ad glaciem rara
Arenaria acaulis . . . . . Caules . . . foliis . . . ad glaciem rara
. . . . . Siliquae . . . ad glaciem rara

Compos. . . . . Caules . . . foliis . . . ad glaciem rara
Barnadesia (?) . . . . . Caules . . . foliis . . . ad glaciem rara
Compos. . . . . Caules . . . foliis . . . ad glaciem rara

Compos. . . . . Caules . . . foliis . . . ad glaciem rara
Nassauvia? . . . . . Caules . . . foliis . . . ad glaciem rara

Statice? cerasifolia . . . . . Caules . . . foliis . . . ad glaciem rara
Gen. nov. . . . . Caules . . . foliis . . . ad glaciem rara

Adesmia . . . . . Caules . . . foliis . . . ad glaciem rara

Calceolaria . . . . . Caules . . . foliis . . . ad glaciem rara

Plantago . . . . . Caules . . . foliis . . . ad glaciem rara
Gen. nov. . . . . Caules . . . foliis . . . ad glaciem rara
Ephedra (?) . . . . . Caules . . . foliis . . . ad glaciem rara
Leuchasmatium? Opuntiaceum . . . . . Caules . . . foliis . . . ad glaciem rara

Juncus . . . . . Caules . . . foliis . . . ad glaciem rara
Oxyria . . . . . Caules . . . foliis . . . ad glaciem rara

Agrostis . . . . . capitulum . . . ad glaciem rara

Phleum . . . . . Caules . . . foliis . . . ad glaciem rara
Gen. nov. affine Arenariae . . . . . Caules . . . foliis . . . ad glaciem rara

Poa . . . . . Caules . . . foliis . . . ad glaciem rara

[illegible]

[illegible] will here enumerate the different [illegible] it appears to contain. Besides the three Chilean regions above mentioned, we have below the Tierra del Fuego,

4. The Eastern slope of the Andes, or the region of Buenos Ayres & Mendoza: - At present it is not, and for a long time to come will not be of any importance. The [illegible] we can only [illegible] [illegible] [illegible]

Islands.

3 The Kaipara coast to the South of the Harbour, and which it was probably a continuation of, is separated from the Main by the Waitakere River. The Island is also called Motutapu by the natives, the word that it means.

4 The Waipoua River is a Navigable river. on the north of Cape Maria Van Diemen's region and is navigable from the head of the tide, say 1500 to 2000 feet broad running up and down with the flow and ebb of the Sea. The South Shelter and water, by the way with on the west bank with very fine timber. The land on the north, extending to the along the Kaipara Harbour, and Comprehending all the Alpine plains the Omawaia district.

10. The Island of Great Barrier; - which forms sufficiently distinct in its Navigation the Eastern coast, to form a distinct region. -

Phytogeography.

Kauri is abundant on this Great-bound Coast, and is recognized, by all appearance some time ago than now, but evidently less luxuriant. - neither did there seem to be any great quantity of the better sorts. - It is true that the upper and lower limbs of Kauri are now a rule of those actually obtained. - Dacrydium cupressinum, as before remarked, is used as an excellent, and Cupressus is the universal fence of the country. The forest the first thing very heavy, and would be rather troublesome if not a thing of open with little wood.

Kauri - Dacrydium cupressinum - Common.
Tanekaha - Phyllocladus trichomanoides - Common.
Dacrydium cupressinum - Common.

Chili.

Mammalogy.

[illegible]

Vulpes [illegible]

Fetis. [illegible]

Mus? [illegible]

Lama? ..... An Agouti? or possibly

Geo. ign [illegible]

Utrilli.

Auctoria. — The Utrillian Grammar is built on the principles of the Utrillian Grammar of the Utrillian Grammar of the Utrillian Grammar

I met here also the following

Ictinia Plumbea . . . . . Mr. Lawrence met occasionally in the Mountains, but
it is not rare; I have not seen more than one or two specimens. —

Caprimulgus: . . . appears to be a migratory species at Bahia. I
saw a female with young, and killed a male, which was in full plumage, on the 20th
of December; — other specimens I have seen in the Museum at Bahia.

Ardea . . . . . I saw specimens of Ardea Egretta and Ardea
Candidissima, and shot, I think, Ardea Cocoi.

Orpheus . . . . . a species very similar to the Turdus Polyglottus of the United States, but
with a shorter tail, is not uncommon in the neighbourhood of Bahia.

Ag. Musicus . . . . . range, I think, as the range of Ag. Sialis; I have not
seen them in Bahia, but have shot them in the neighbourhood of Pernambuco. —

Alauda longirostris . . . appears to be common throughout the range of Ag. Sialis; and
I have not seen it elsewhere. — Mr. Gardner has not met with it in the Province of Goyaz. —

Dacnis cayana . . . . . "female of Cayenne" — female of Mr. Gardner's collection from Rio
Janeiro: appears to be the same as the Cayenne bird. —

Tanagra . . . . . in Cayenne and Bahia; most like the Scarlet Tanager of the United States, but
the black markings not distinct; darker spot on the back of the neck, and the feathers on the
throat and breast white. — Yellow throat and breast.

Trochilus . . . . . ruby throat, spotted breast — numerous specimens obtained at Pernambuco, by
Mr. Gardner. —

Psittacus . . . . . a species of Parrot from Bahia, with the tail feathers.

Chili.

Vultur ? - . . . a large Vulture frequently shot in the various provinces.

Numenius ? . . . . . one specimen shot at Valparaiso, apparently the same as the British Curlew, but rather smaller, and the plumage more uniformly brown, without the dark streaks on the breast & flanks; the bill was also rather more slender, & the tarsus relatively longer than in the British bird. -

Vanellus cayennensis . . . A few individuals seen near the Lake of Tagua Tagua; plumage of Plovers. -

Fulica . . . . . Dark coloured Water Hen, - very common in fresh water Lakes & Ponds. -

Ardea . . . . . Small White Heron, - Rio Maipu.

Phoenicopterus Chilensis, Eléon. - Several in their habits & weight to the Flamingo at Valparaiso during the Day of the Vulture. -

Carbo . . . . . entirely black; - common about the Coast near Valparaiso.

Larus maximus ? - apparently the same as the Fish-hawk of the Falkland Islands. - Valparaiso, - common.

Sterna . . . . . Short wings; rapid flight & diving action; tail forked; bill pointed; nostrils in tube directed forwards. - Flight rather like Swallow & the Black-tern. - Rattling note & rapid vibration of the wings & tail during. - Harbour of Valparaiso, common. -

Anas . . . . . Duck or Goose; white head, neck and breast, black bill and wings over the back of Valparaiso.

Reptiles

There is one species of Reptile in Chili. - Dr. G. never found actually in the country of the Incas. Had they been known to exist in the Andes, and which proved a Mistake. - Dr. Gay was told of it in the Andes of Peru & Chili. - Of the Frog - like we found in the Andes of Peru & Chili in the Cordilleras, Rough Skin. Dark with Black Spots in the

Tropidolepis * - - - - - - - Small; no conspicuous projecting scales over ear. - Inhabits region of the Cordilleras, alt. - 8000 ft. (Fig. by Mr. Agate)

Orbitelæ.

Corpus [illegible] *ovatum.* [illegible] — *Caput* [illegible]

Corpus [illegible]

Pedes [illegible] *Mandibulæ* [illegible]

Oculi [illegible]

Abdomen [illegible]

Pedes [illegible]

Palpi [illegible]

Mandibulæ [illegible]

Labium [illegible]

Maxillæ [illegible]

Sternum [illegible]

Pectus [illegible]

Anus [illegible]

Epeiridæ.

Pedes [illegible]

Mugilidæ

small forwards are rather thin laterally. — In M. Rio Maipo, at 3 A. up, one never 12 lb was a small fish one inch or two are taught, but are some pushing of Bisso. — All the Mullets only reached one little a foot from fish, one 3 inches in length, and to be brought in quantities from a little to miles distant; but Mugil cephalus certainly was not there, as any of the fishermen, though probably the same. — The Ichthyology of the Streams running down this side of the Andes must be extremely interesting, though probably not very varied — for instance, that of the Rio Maipo on of the Lake shows sandbank.

The Mugilidæ Mullets are abundant and are brought in from nearly to the Valparaiso market; but our short stay did not permit us to make an extensive collection. — We could not but remark the great fondness still of the Chilean Fish.

Scorpæna . . . . . no cephalic on body; — two appressed spines on gill-covers; pectoral fin-rays unarmed. — market.

Callorhynchus . . . . . 1 ft; long spine on gill-covers; outer ray of pectoral fin-rays 3 or 4 thick, and more or less separate as in tactile; all body mottled with black roundish spots; 2 dorsal fins. — market

Otolithus? . . . . . Not much compressed; 2 ft. — only 3 inches long, 3 barbules young.

Sciænoid . . . . . rabbit of some Sciænidæ; head covered with scales; long pectorals and ventrals; 1 ft long; mouth even with the snout beyond. — market

Corvinoid . . . . . of Cuttos 1 ft — compressed, but somewhat pikish; first anal spine short; pectorals long, somewhat pointed as in Mugilidæ; — no inch. — market

Elegipus Macloviensis. — . . . . . 1 ft; long and with depressed rays; 2 dorsals the 2nd high; mouth small, fins exactly round. — Market at Valparaiso. — We did not see this fish at Port de Fuego

Glyphisodon . . . . . different from the Cuttos in structure, 1 ft long & thick, oval. — market.

Acanthuroid . . . . . remarkably thickly mottled with roundish black spots. — market.

Mugil . . . . . Fish

Atherina . . . . . 3 inch. — a broad silver stripe. one ft.

Blennius . . . . . Cuttos thick spots each side, one back; tentacle over eye. 2 inch

Blennius? . . . . . compressed; lips fringed; tentacle over each eye; 3 inches.

Chili.

Pholis? . . . . . near 2 in. large scales; no tentacle over eye; black spot at base of tail. – Valparaiso. –

n.g. Blennioid . . . . . Sword like bottles, broad, but not spiny; ventrals 3 rayed; tentacle over each eye; 4 to 5 inches. –

n.g. Blennioid . . . . . 2 sp; 1 ½; no tentacle over eye; teeth like large; head too small in proportion. – Market.

Gunnellus? . . . . . Long. blackish. pectorals ovate; 1 sp. from market.

Gunnellus? . . . . . 2 sp; spotted; pectorals very long, pointed; more slender; 2 to 3 inches.

n.g. Gunnelloid . . . . . Caudal, dorsal & anal united; ventrals of 2 separate rays, situated almost under the hips; body, long, 10 inches; head & mouth long. – Market.

Bdmaclus? . . . . . much resembling the Brazilian species but without the gill slit, colours the same; 6 to 7 inches. Market.

Lepadogaster . . . . . of Cuvier; Disk with eight branched plates; pectorals with 10 feet; ventrals united inferiorly; an appendage behind the vent. – Among the Zostera.

Clupea . . . . . 6 in. by 2 in. depth. – market. –

Engraulis . . . . . Smaller than the Callao species.

Scomberesox . . . . . 1 to 1½ ft. long. – Market.

Hippoglossus? . . . . . 3 to 5 inches; thin; mouth destitute of pointed teeth (Canines) – Market

Anguilla . . . . . yellow & brown; a row of white dots, ½ inch apart on the mesial line; pectoral white. – Market.

Synganthus* . . . . . 9 inch; body 8 ½ long; 3 in. deep; thin as the back; pectoral fin ovate, rounded. – Obtained in Market by Mr. Dunn.

Scytalium . . . . . 2 ft. long. – blackish; fulvous. – Market.

Chili.

Callorhynchus . . . . . 1ft. long; — Spotted. — Market, seems Common.

Heptatrema . . . . . much shorter in proportion than the sp. of Tierra del Fuego.

Insects.

We could not but remark the extreme scarcity of Diurnal Lepidopterous; and we were three days on shore without getting a sight of any. — The other orders of insects afford a fine field to the Entomologist; and one which we presume is at present very little known. —

"Hyppobosca" . . . . . about as large as the common — Valparaiso, Dams.

"Dragonfly" . . . . . with brown; all pale wings except abd. — Valp.

. . . . . 2 sps. Valp.

. . . . . Valp.

. . . . . Valp.

. . . .

. . . .

. . .

n. sp. Staphylinoid . . . . . Valp.

Gonyleptes Rhodangium . . . . . five sps. — among the dried Seaweeds. Valp. Valp.

Scorpio . . . . . black, entire & tip of abd. reform. — Under dried Seaweeds, Valp.

Scolopendra . . . . . large; Villa la Mar (Southern)

Geophilus . . . . . Valp. —

. . . . . Valp.

. . . . . 2 Valp. sp. — small sp.; pale Blue at inter. Valp.

Julus . . . . . large — variable: abundant under the dried seaweeds. Valp. with Centipedes, & with the Centipedes on bare pale with the pair . .

Scarab . . . . . large black.

Scarab? . . . . . green.

Curculio? . . . . . small black.

Coleopterous . . . . . near Valp.

Fly . . . . . large. Valp.

White Ant . . . . . Common in most Valp.

Mosquito . . . . . 1 with black. — Valp.

. . . . . perhaps 2 sps. — elytra more delicately punctured.

"Scolytoid" . . . . . large

Curculionid . . . . . large; elytra & beautiful. — Valp. —

Chili.

in all.

Mesembrianthemum — [illegible]

Alstroemeria — [illegible]
Leontochir — [illegible]

Cereus — [illegible]

Bulbocodium — [illegible]
Tillandsia — [illegible]

Bromelia — [illegible]

Hydrocotyle — [illegible]
[illegible]

Loasa — [illegible]
[illegible]

Oxalis — [illegible]

Nolana — [illegible]
[illegible]
[illegible]

Ephedra — [illegible]

Libertia — [illegible]
[illegible]

Desfontainia — [illegible]
[illegible]

[illegible]

[illegible]

Fuchsia — [illegible]
[illegible]
[illegible]
[illegible]

Escallonia — [illegible]

Tropaeolum — [illegible]

Grasses.

The [illegible] species of grass known to [illegible] Chili. Peculiar and [illegible].

Of the Triticeae Tribe, a few inhabit [illegible] Cordilleras, [illegible] Andes, [illegible] Valdivia, &c.; near the Sea-coast. — Of the Festucinae, Dissanthelium [illegible] Andes; Festuca (Megalachne, Lamarck), in the Cordilleras near Santiago; Poa [illegible] Valdivia & the Sea. —

Eaton

Chili.

The following list of Chilian Crustacea was indicated by Mr. Dana:-

Calappa

Cancer

2 sp.

Xantho

Atelecyclus

Cancer id.

Corystes

2 sp.

Lambrus

Thia polita

Ebalia Tuberosa

Maia

Eurypodius Latreillii

Pinnotheres

Inachus

Hippa

Hippa

Porcellana

2 sp.

Petrolisthes

Athanas?

Rhynchocinetes

Gonodactylus

Gammarus

Talitrus

2 sp.

Orchestia

2 sp.

Utile.

. . . . . ' ' ;

Utile

. . . . . ' ' ;

Pyrethrum
Adelia

Thespis . . . . . (= una) "alba" L. rubra . . . . .

Scaphidoura . . . . (= una) "n. g. of Ephem. a genus".

Ligia . .

Tillandsia . . . .

Porcellio .

Armadillo .

Balanus . "larga" = L. tintinnabulum (L. vitrea)

Conia . . . . . di (L. vitrea)

Armadillo.

Lumbricus . . . L. = L. L. = L. rubra (L. vitrea)

. . . . . larga = L. tintinnabulum. Acanthopus (L. vitrea)

Spirulis . . . . "L. rubra rubra" (L. vitrea).

Mollusca.

Gymnobranchia . . . . . Tritonia = L. vitrea (L. vitrea)

Pleurobrachia . . . . . L. rubra (L. vitrea) = L. vitrea (L. vitrea)

Cuthona, Aeolis, Tritonia, Eolidia in L. vitrea rubra.

Die fett gedruckten sind in Skagit, Lake, Puget Sound und Whatcom.

Limax
Vitrina (Vitrinidae) . . . . . Tritonia = Tritonia = L. vitrea (L. vitrea)
. . . . . rubra = Tritonia rubra Lam. (L. vitrea)

Helicina Gravesii . . . . . " Lamp."
. . . . . "Hemphillii = L. vitrea"

. . . rosea . . .
. . . Vitrinoides .

Succinea . . . . . "Tritonia rubra = L. vitrea"

Physa . . . . . Aeolis rubra = L. vitrea

Planorbis

Lymnea . . . . . "Doridella".
. . . . . "Tritonia Lamarckii"
. . . . . minuta. Scaphidoura Lamarckii = L. vitrea (L. vitrea)

Chili.

Ancylus - - - - - - - - - - - - - - - - "mar animes, Aconcagua"

[illegible] - - - - - - - - - - - - - - - -

Chili.

Hexactinellida

Chonelasma

Habrodictyon

Holascus

Holtenia

Actinia

Note.

The Cordilleras are rather more than at Valparaiso; the crests of the lower ridges of the Andes, even with steam appear to have some practicable passes between and over them. On both the Cordilleras may be visited to snow line here at the coast, for we found the ascent comfortable and easy practicable for about two miles. The road winds gradually the banks of the Stream; and the immediate river valley soon becomes narrow, leaving but little room for cultivation, and by degrees a mere ravine of great depths. The height of the different passes in this district appears to be pretty uniform, and probably may not vary materially from 15.000 feet, though I am not aware that any accurate measurements have been taken. The plateau or "table-land" is rather the more gentle declivity towards the East and there are many leagues of pasture land (here called "Pampas") stretching in that direction, dotted as far as I could learn (but) ruins and ordered by the Incarnes of the Andes.

As the plateau is reached, the ravines become not nine many per above it, and although wood for the ascent with horses was at times difficult, they not entirely any more formed the imposing aspect of the Andes of South Chile, neither were we at any time to get a very extensive view.

The Rimac derives its waters exclusively from the Snows of the Cordilleras and the rains in their vicinity. At present it flows for a mountain torrent through a rocky, rolling its clear water rapidly over a pebbly bed to the very beach. The quantity of water is small in proportion to its length of course, compared with the streams of more climates, as for instance with the Delaware even allowing for the quantities which are drawn off for irrigation. — At its mouth the width may be about the same as the breadth of the Schuylkill at Fairmount, or 300 feet by 4 inches in mean depth — at all events the volume of water is not sufficient to force a passage through the beach, which does not here very materially, but the water filters gradually through the pebbles. — The next stream to the North, the "Rio de Caravaillo" seemed entirely similar to the Rimac as far as our observation extended, but its mouth was not visited. — The river of Lurin to the South-ward, flowing on a sandy beach, sends a narrow stream to the Ocean, which we leaped over on our route to Pachamac.

Geological Structure

The Geological structure corresponds entirely with that of North Chile, as far as I visited the latter. There is however a narrower belt of Sedimentary rocks

rocks west of the Granitic region; which is standing in North Wales.

This belt consists, as far as fell within our observation, of the islands of Trenton & San Lorenzo, the Farallone islands & the hills on the main at Farallone bay; also as far as we could judge by a distant view, in all probability the high point of Chamilla. The rocks are argillaceous, and apparently of the age of the Metamorphic group (the "Lias & Oolite"); - They are distinctly stratified, and more or less slaty in their consistence. The layers are many places being tinged with the red oxide of iron, and in others entirely black as in the vicinity of Coal beds; but we could discover no unequivocal traces of this substance, which has been asserted to exist here. We saw many fine examples of "faults" in the stratification, more particularly to the S.E. of Mt. Diablo, along the high coast of San Lorenzo. Gypsum in small quantities was of frequent occurrence, and Mt. Diablo obtained from many parts of its sides pebbles of Galenite. The other minerals observed in this formation consisted of

The Fossils found, were an Ammonite, one specimen; bivalves resembling externally a Magilus or Lingula but differing in the hinge; partly abundant in low cliffs of clay; and a "univalve resembling a Turbo". - An Ammonite, belonging to the same section, was also seen by Lt. Wilkes, which shows that the same formation occurs there also. The fossil or Belemnites, which occurs the characteristic point of the "Metamorphic group". - The westward point of San Lorenzo, as determined by our observations is 122° 30' W.

The hills immediately to the Eastward are exclusively Granitic; yet the rock is so broken, ragged, full of seams, and so variable in its appearance, that I was at first a good deal puzzled with it. In many places it has the exact appearance of Stratification, and for a long distance, that the most practised eye might be deceived. We found this Granitic district extending all the way to Suisun & beyond, and its width may be estimated at about 25 miles. - A matter of some interest in a Geological point of view, and which may be considerable to another visit more suggest, is, that Lagoon is a region not subject to rains, decomposition takes place much more slowly; and it was not unusual to see little entirely bare, which in our climate would have been covered with two or three feet of earth. For the same reason we found the road-cuts of the Western Valley (Embarcadero), which with us they would be washed away with first showers. - Towards its eastern

eastern margin we found the granite coarse-grained and presenting every apparent
I did not observe Granite, or indeed any remarkable minerals in the Granite, unless Epidote. — Mr.
Dana observed . . . . .

Immediately Eastward of the Granite commences a formation of the old igneous or
"Trap" rocks, consisting it would seem wholly of greenish Porphyry. The line of junction was bare
for a few yards, the latter consisted of the same kind of Granite of the other Porphyry: again the
two formations appeared to meet in the midst of a hornstone, and were traced within a very
short distance of each other. No Carbon Limit was met with, but probably the strata lower
may not crop out to view. The Porphyry entirely resembled the Granite, and that found in Vici-
-nity of Bolton. I shall shew the Porphyry pebbles, apparently the debris of this formation
or Common to the Granite was taken —

The whole platform of the Cordilleras, including the Río Rimac and the high
est Peaks, is formed of Calciferous rocks; and apparently of the same age with those
last, or belonging to the Cretaceous group. The true "Cretaceous Series" of "Formation"
or Secondary Limestone, characterized also by the Cardiolite, appears to be wanting on this
Continent in South America? — Some indeed accused of the genus of Coal, "Lignite,
Bituminous" and coal obtained by Mr. Rose and Mr. Pentland, but was unable to procure
Specimens, and it remains to ascertain whether it may not be a species of Lignite. I
myself picked up a Specimen of the same description with that from San Fernando valley
but longer & thinner Leaves, imbedded in an argillaceous rock, within 20 feet of
the Perpetual Snow! — It occurred in argillaceous Limestone, which is used for burning,
at Baños; and also presenting appearances, that I have not sought from
the vicinity of Casa Cuchu. Conglomerates seemed to prevail over a great portion of
the coast we traversed — the imbedded pebbles being often of regular shape, and smooth
and polished as if on a water beach. Every moment — that the public in the Capital
Towns of the Cordilleras were often startled and even petrified at the sound
thereof in Lima water, and indeed every body is distinguished from a distance.
Travellers observed very few Land Tortoises, but few petrified Vegetables were met with
save with small pebbles, were not uncommon. The Silex Resin of Copaiba, some
thousand of perpetual snow, is distributed, as well as in numerous, in a compact Limest-
-one, but whether argillaceous or an impure Limestone I did not ascertain — at all events
I found numerous Vestiges of a Land shell Calcareous Spar, with almost the texture of "Sale Spar."—

[illegible]

Earthquakes. — Peru is famous for Earthquakes, perhaps more so than any part of the Globe; and we were told that we were "in the Earthquake season". — There had been [illegible] during the past year — 11 in [illegible] and the people [illegible] were at last [illegible] "it is over for this year" — [illegible] The vicinity of Arica has been [illegible] but [illegible] we [illegible] [illegible]; but this was to happen that should not be [illegible] by an Earthquake. So we [illegible] like the rolling of a heavy cart over a hard road, and was very [illegible] and accompanied by a distant rumbling sound like [illegible] [illegible] supposed by the motion being communicated to the body we [illegible]. I myself did not perceive any thing of the sort, but some of our party were positive on this point. —

Peru.

— In the language of the people of the Country "it was a powerful Earthquake, but did not get to the surface".

The second late [illegible] the 3rd June. [illegible] was felt very sensibly by everybody sitting down — but nothing in the Shock at the time led me for even a moment to suppose it was any extraordinary.

The first one was the 13th June, about 8 a.m. — There was a loud rushing noise like the water and then a loud jarring noise which made the house tremble violently. We just had light to get out of doors — Men were thrown down by the violence of the jerks. We had light enough to see the walls of the houses all around just "Heave" like the undulations of the sea, which continued. Upon my word I had to exert myself to keep my feet — and I assure you that there was no time to lose as the shock was over.

It is said that during the prevalence of one of these violent shocks the inhabitants of Ayacucho, who were at mass at the time of the occurrence, had to run for their lives. Some of the steeples fell, many buildings have been much injured, but it is a providence that so few lives were lost. It is said that the Indians are so impressed that they should have been warned of the Earthquake may in part be accounted for, and some have been observing some-gel certain a very few years.

The shock of the 13th was very light at Arequipa. I felt the one which made the spot to shake if upon which I stood as well by the undulation of the ground, a mile inland, and could perceive it at the time. From there to the coast at the half-way house, where it was said that the waters dipped, but on what authority this assertion rests I was unable to learn — It is stated that from [illegible] the height of the Valley it may be presumed that at the Mole the height [illegible] was 40 or 50 feet. At all events it is difficult to conceive how any thing could have escaped being carried away by the Ocean, should there ever [illegible].

The other Volcanoes are [illegible] in a state of [illegible].

Ulcinate.

"The Peru it was said", is a word in the Aymara [illegible] about. The Indians suppose them, when it is not a period "Peru" — and it would be best for the Steam which issued from the Crater: Collection [illegible]

[illegible]

The town is small & mean. The streets are [illegible] but [illegible] the Alameda — it is not a fine one. Water melons, which are [illegible] round in July & 12, grow out to the dimensions of [illegible] the [illegible] pepos & bottle gourds. Cucumbers [illegible] are [illegible] apparently, [illegible] & [illegible] & [illegible] &

Peru.

June 9th room at Lima - 8 a.m. - - - 69°.
" 10 " 6 a.m. 68°.
" " top of Amancaes - - 1½ p.m. 71-6°.
" open air at Lima 7½ p.m. 67°
" " " 10½ p.m. .... 62.°
" 11th room at Lima 7 a.m. .... 65°.

June 11th open air near Pemaes . . 5½ p.m. .... 65°.
" 12th " at Lima 8 a.m. .... 66°.
" 13th " " 7½ a.m. - 66°.
" 14th Beach of Tetay . . . . 7½ a.m. - - - - 66°.
" " . . . . 11 a.m. . . 65°.
" 15th " - - - - - 11 a.m. - - - 61°.
July 16th open air at Lima - 12. 12½ m. by D. 52°. 61°.2.

I regretted getting the last mean temperature at Lima, till after I had quitted it, as I might have had a little trouble. The way of procuration was, to make a hole in the ground, perhaps two feet by 2½ in breadth and 2½ feet deep — a thermometer placed on a piece of the ground at the bottom of this ordinary, suspended rather less than 1/2 an hour, the temperature of the open air being 65° at 5¼ p.m.

The temperature of the Sea taken at the same time (the 11th June), were in three different trials 62°.6 in one of the 2 July, after the weather had become somewhat cold. The temperature was again taken by Dr Tate with Fahrenheit at 62° at 12 a.m. the air being 67° and 2 of an hour later in one of the rich valleys [illegible] the water 62° and the air 72.

According to Ulloa, in the "Annals of the Incas" of Peru, at Arequipa there had rain fell in the following years - 1701, 1720, 1791. &c.
and there was thunder & lightning in 1552. 1720, 1745, & 1764.

The foregoing observations apply only to the Maritime Tract, which extends from the foot of the Cordilleras, as they are entered a region of perpetual snow. The Cordilleras, as they are usually seen from the coast the ground rises gradually, until by the time you arrive at the foot of the snowy mountains, which are in view in this, when the traveller is proceeding from the Coast to the very edge of perpetual Snow. — Near the mountains there appears to be a regular rainy season, but the rains are so frequent for the production of fruits, or perhaps there is entirely absent. The Thermometer in the temperate [illegible] of June, July, & August, [illegible]

July 17 - on ascending the summit of the Cordilleras from the coast to Lima - 50°.
" 20. — at Lima not above 400 feet elevation — 4 p.m. — 12 m. . . . . 45°.
" " " " in the sun . . . . . 42°.
" 21. . . . . " Mean . . . " Extreme . . . . . 36°.
" 24 — at Baños festival, about 10,300 feet elevation — sun dazzling . . . . . 50°.
" " " within tent — at Night . . . . . 50°.
" 23 " foot this morning. —
" 24 — at Baños within tent 7 p.m. . . . . 44°.
" " " 6½ a.m. . . . . 44°.
" " — at Night without tent — cold . . . . . 36°.
" 25 at Baños about 8 miles & probably 11,000 feet elevation - at 7 a.m. . . . . 44°.

Cuz

[illegible] the [illegible] just as the [illegible] of the [illegible] and called it. "Said" — and [illegible] within [illegible] [illegible] [illegible]

Peru.

[illegible] advantages as well as advantages in this respect. The Peruvian [illegible] which [illegible] [illegible] [illegible], when he [illegible] [illegible], as [illegible] in the [illegible] as [illegible] through at Peru. Lima was founded in 1534, about a century before the settlement of any part of the United States. — It was — [illegible] still a [illegible] [illegible], and there seems a fair prospect of the most mechanical improvements — When a few years the navigation of Peru has been established in this place. There are [illegible] in the papers published in Lima, one of the 4th inst: they are but small sheets and the price very dear, and though many in the [illegible], still point to the inevitable movement.

The population is composed of the three races, of Whites, Indians & Negroes, and their various mixtures; and of course the Colored portion predominates, though apparently not in so great a degree as through the Country. The great mixture of Negro blood was especially at first very [illegible] with Whites. — Mr. Gay. [illegible] gives the population of Lower Peru, in 1803, as 1,076,000; viz. 136,000 Whites 609,000 Indians, Mixtures, &c. as [illegible] Negroes 40,000 Negro Slaves. — From [illegible] I think that the population is very [illegible] at the present time, for the Country has very frequently been [illegible] by the [illegible] of the Incas — and I think it is [illegible] that a great portion of the Soil was cultivated under the dominion of the "Children of the Sun". — Negro Slavery still exists in Peru [illegible] in great [illegible] as ours.

At the time of our visit Lima was occupied by [illegible] Troops. [illegible] [illegible] [illegible] the name of the Town, but it is usual in such cases, without [illegible] [illegible] [illegible] [illegible] [illegible]. The Troops had [illegible] to show that the [illegible] President were doing [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] just as, [illegible], but [illegible] [illegible] [illegible] [illegible] [illegible]. The [illegible] [illegible] that the Revenues of these Countries [illegible] in the Support of the Military, we may suppose that this would be rather a tender point. Without [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Peru.

Peru not agreeing with Prudent, and the climate proving unhealthy to dear Mr. Mrs. Prudent & Miss Edith Abbott, & on the 4th of May I know, when the rest of the coach & the coach horses started for Arequipa. — Mrs. Prudent & I were invited to take a portion of the journey outside with the coachman. — The road hitherto will form an epoch in the history of South America, as having the first steam locomotive that ever travelled between Lima & Callao. — With some exceptions the Peruvians are very civil & obliging — travelling and agriculture of the ancient days have been left in the office; but the west coast is not behind the foreign residents at Lima, as well as the Peruvians themselves.

May 4th — at last the coach made their appearance at about 9 a.m. — our friend Mr. Biggs did not get quite as far inside as we, for which reason a certain part of the road which we afterwards found, we should have suffered. — Our route lay up the valley of the "Rio de Canumilla", the mist over the settlement of the Rimac — the sun at the end and came out at the Portada gate of the suburb of St. Lazarus; a toll only did we pass in order to show our passport on our private journey. — Our route lay along the margin of the extensive plain at the mouth of the Rimac, and after crossing it we did not pass any material elevation before reaching the most valley, though passing amongst hills. — As we proceeded along the plain we noticed the occasional formation of cotton in various places, as marked by the extremities of dark, evergreens at a distance. — For the most part living at various times as if from "bitter" but we were told that it was from the burning of the cane fields, & other causes and in various ways we are liable. My hand incursions appearance from the banks of the river a little resembling to find apparently near of "Lambay by Pepsin" at the foundations in the city of Lima, (Mill.). — The contrast was very striking in the landscape, between the fertile green of the irrigated plain and the barren stony-colored hills. — Many of these along the base of some of the hills were provided out to us as the Alcalde of the Rimac. A little further on, 7 leagues from Lima, passed the ruins of an Incan village, situated as we imagined, round them, just outside of the irrigated land. The walls were very thick, uniformly at right angles, and built of mud & unburnt brick; much of the eastern manner of forming walls for enclosures, and often buildings. — Passed a large band of horses, [illegible]

[illegible] cattle, and even [illegible] which show that the irrigated ground is not used exclusively for tillage. — Reached Ponchoma, the first stopping-place, 6 leagues from Lima, but concluded to go on to Caballeros, 2 leagues further. — We arrived at the latter place in time for a short excursion along the banks of the "Rio de Lurin", which runs a more westerly direction than Rimac; always by the latter. We soon finally emerging from the first hills of the cordillera in the great [illegible] on the road to Lima. The road was in some [illegible] that it would be inconvenient to race away with, one of those things a boat for a [illegible] ... the view from it a large [illegible], and a good supper provided — We passed the night on the [illegible] the barony of which we had not yet learned to appreciate. — During the night the Earthquake, often alluded to, took place.

May 17th. — Our guide wished to start early, saying that then it would find the [illegible] very hot on the next portion of our route. [illegible] thick fog, which cleared at 7 o'clock when the sun did come out hot, as usual unclouded. The last light [illegible] and [illegible] day [illegible] by the [illegible] began in height; the air [illegible] a number of [illegible] and [illegible] cactus. On the upper part of this valley the mountains, though more frequently [illegible] appeared [illegible] of the [illegible] of running water; though the inundations [illegible] easily distinguish their furrows from those about Lima, which are [illegible] by the sliding of earth and stones. The frequency of the bones, indeed on the whole [illegible] route, excited interest. Here [illegible] life, [illegible] calculated to excite [illegible] antipathy. The [illegible] only alone we met with some interesting [illegible] and beyond a [illegible] bare limestone valley, we reached the river again just before the little hamlet of [illegible]. — We had then reached Obrajes, without doing a day's work, and it was the only part of the Cordilleras where the most casual observer could have supposed the [illegible] were. After resting about an hour at Obrajes, we proceeded. The valley through which still afforded a pretty unique type of ground for investigation. The [illegible] were formed during the summer of the day were seen slightly visible from over the coast, often [illegible] without any enveloping substance. Sandflies (Simulium) [illegible] were very numerous at in the [illegible] parts of Peru were [illegible] from up to a pretty [illegible] altogether at Caballeros but [illegible] were [illegible] gives very little trouble in Peru except those of the [illegible] origin. We arrived at Yuca at dark, after a ride of 10 leagues since morning. We [illegible] "Tambo" but the owner was not at home, and we had up our quarters for the night in the open [illegible]. Having a little [illegible] purchased in

in the Village, except a few fishers, and we were to our mind [illegible] the Island on both sides from Rome: after which we beyond ourselves for the night in the Village of Isola del Liri, which had several wooden huts with over fishers under our heads — The Inn was in ruins and the roof was not 'Christian-proof'. But Morrison we were not satisfied.

May 10th — Monte Cassino. — The morning found the persons in very bad mood and that was the cause not [illegible] the Inn, the mountains but beautiful, gay with Villandsies, but one in any of the convents had a pencil drawn? [illegible] appearance, and after passing a [illegible] hour the hills had become rather green: the inhabitants of the district at the same time exhibited that we had seen about a region earlier in point. The valley was very narrow and the ground had been [illegible] and with traces of the Romans of the adjoining height till a village was passed at out-pocket half way up and running in right. [illegible] on the [illegible] the mountains [illegible] in their [illegible] and the road [illegible] [illegible] [illegible] from the very summit of an immensely high and precipitous [illegible] [illegible] with occasional patches [illegible] ground, the hill of [illegible] being [illegible] The ground to the right of the [illegible] was [illegible] by the [illegible] [illegible] [illegible], and required the [illegible] to be [illegible] by Mr. [illegible] Company. Here [illegible] however, were put [illegible] on the Under [illegible] for [illegible] [illegible] [illegible], [illegible] — [illegible] [illegible] [illegible]

Ouajille [illegible] is the second village in this route, and was the [illegible] village, entering it at the north. [illegible] not visited with distant. It has a [illegible] with low trees, appearing [illegible] from its vicinity, [illegible] on an open space. The dwellings are one story, with a flat [illegible] and [illegible] without [illegible] and built of [illegible] in the same style, — so Ouajille is said to be the "residence of many wealthy people"! — In our visit from the mountains we witnessed here a singular custom, which does not [illegible] to the [illegible] of the inhabitants. — On the morning the Women are called at [illegible] to sweep the public squares — the [illegible] from thence until 11 is busily with the [illegible] [illegible] — that on account of the [illegible]; but the authorities are [illegible], and must be [illegible] in the town, possessing at the same time the powers [illegible] to enforce obedience. — [illegible] that we first saw the Lamas used as a beast of burden; though they are sometimes [illegible] to [illegible].

[illegible] — This morning [illegible] Joseph with, having procured the means of [illegible] were going the round and [illegible] Women, to the terror of the inhabitants who fled [illegible] resistance. — All the [illegible] in the town [illegible] to [illegible]: [illegible] in manner the [illegible] [illegible] the [illegible] [illegible]. [illegible] [illegible] [illegible] the previous evening [illegible] to be procured at present. — We [illegible] [illegible] "Quijocas" [illegible] [illegible], and started at 6 A.M. — On [illegible] [illegible] [illegible] the [illegible] farming [illegible] [illegible] [illegible]

from the sea. We have exercised some skill with some success to-day still, which continued it into all for the remainder of the day. The coast of the Island is here nearly a league in width, and the surges were so violent, that the Island is not safe to approach. Besides this we found water running to the Island on the Mainland. We had got two leagues off on our course, but all these things and did not come at all into the bay. There is a very light [illegible] but not that it is entirely shut, but there is a very little [illegible] from the sea to the [illegible] of ancient mill against our approach with a very small movement; yet I feel persuaded that there is within the bay.

[illegible] just at last and almost a [illegible] with [illegible] which we [illegible] persons are engaged but what damage we have we did not know. - With regard to [illegible] with an account which appeared in [illegible] right hand [illegible] the remarks of the [illegible] We were then into the common footpath with at [illegible] although we [illegible] a [illegible] passing the bar and under low when the the number [illegible] might [illegible] it. [illegible] feet? - The first [illegible] the [illegible] bar with [illegible] and with the [illegible] way for the ship with the utmost [illegible] and yet we have [illegible] [illegible] [illegible] ground"! - In the morning we [illegible] [illegible] [illegible]

seemed a good road, than we had seen since we left Lima, but we had scarcely
left the town before we found it very bad, and that it was impossible
to go more than a walking pace. The remainder of the day was spent chiefly
in descending the hill we had ascended before night. — My companion
and I were the only passengers in the coach, and had room to lie down
at our ease, but could not be taken as a fair sample of the accommodation
to be met with on the road. We had brought with us from Lima a
gentleman who had been stationed for the purpose of examining the
Peruvian Mines, and from whose information we expected to derive much
benefit in the course of our journey. — He had not been long in the country,
but had been employed in the Mines of Pasco, and was therefore well
acquainted with the nature of the ores, and the best method of working
them. He was also a scientific botanist, and had been sent out by the
Government to collect specimens of the plants of Peru. He was a native
of Germany, and had been many years in the country, and was perfectly
conversant with the manners and customs of the people. This was the first time we had heard
our language for two years. We took up the time pleasantly with
conversation, and we gleaned a variety of information from him on this and other points. —
We remarked that the weather was not nearly so cold as we had expected — we
found our thick clothes very oppressive; and the sun was as powerful
as in the West Indies. — In the course of our journey we saw many of the
Alpine plants as on this mountain. — At length we lost ourselves among some hills about
the middle of the afternoon, and proceeded very slowly. — Our guides were not
good at all times, and it required the utmost vigilance to prevent them from losing us altogether; —

intent

indeed the largest we had seen with us, but it was the [illegible]
the shroud to it. — We rested a while in the [illegible] and
rode, about 4 leagues the [illegible]; but the [illegible] road was [illegible]
a little greater; and we passed [illegible] with the [illegible]
foot. — On our right was a [illegible] range [illegible], the [illegible]
direction from. The [illegible] is [illegible] the [illegible] of the [illegible]
Spanish [illegible] to [illegible] [illegible] [illegible] [illegible]
& the last [illegible] [illegible] [illegible]. [illegible]
and at one point, at the [illegible], we found [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]. [illegible] [illegible] [illegible] [illegible]
general the road, or rather [illegible], and we [illegible]
all over the [illegible] and there is still [illegible] the [illegible]
was thronged with a [illegible] [illegible] [illegible] [illegible]
Peons, & Negroes from [illegible]. According to the custom of the country
we applied at once to the Alcalde who in Abyssinian fashion to find a house for us, and a
person to cook, to whom you pay 12½ cents, and were provided for. —

May 22. — Pacasmayo is situated pleasantly [illegible] [illegible], at the [illegible] of [illegible],
and probably the [illegible] in the [illegible] may not [illegible] materially. From [illegible] a
couple of days southward [illegible] and a [illegible], of which the [illegible] are [illegible] formed.
The [illegible] in which it is situated is very narrow and it [illegible] [illegible], [illegible],
rugged and [illegible] [illegible] of our family called many [illegible] "why the Valley [illegible] not
fall off." The Hot spring before mentioned is within a [illegible] of the village. As we
[illegible] the town was deserted, the inhabitants having [illegible] (it was said) "to take
charge of their cattle". Having eliminated as promising [illegible] for the day we separated into
two parties, Myself, Rich & Agel taking their steps down the stream, while Mr. Gardiner
Wedge and myself took the opposite direction. We crossed a great [illegible] on the [illegible]
to the left, and met with great success in the Botanical way, but Mr. W. being [illegible]
this unwell did not wish to go to the summit and turned to some promising ground
along a rocky ledge. Ascended steadily, walking by the way, the [illegible]
gradually becoming steeper — by noon [illegible] reached a very considerable elevation.

about

About this time I observed a Condor coming down the valley, sailing steadily and majestically, and I stopped to observe its motions — to my surprise it took a turn towards a second and a third, the last time coming so near that I began to think that the bird seriously meditated an attack — I was in the most humorous possible position for a fight — my Sling the cord untwisted by shooting and my right hand was useless, & my knowledge of the nature of the ground — but there was nothing to be done, so I took a rest & pocketed my knife — at the instant, as if my resolve with the arm, the bird wheeled off in a different direction; and I confess, however humiliating the acknowledgment, that I was at that time very well satisfied with his determination. — The wind was began to be practicable only at particular points, and I was careful to note my course, by means of the difficulty that might otherwise occur. At last I reached the summit of the ridge bounding the valley — there were higher beyond but this sufficed to think of scaling them. From that point I commenced my descent by cut it down at once down fast above Bolivia, and got [illegible] with a single unequivocal effusion of blood — the remaining pounds are a source of unpleasant reflections. Descending to the west we took out of the mines of Bolivia at the [illegible] upon the right distant ridges the last ray disappeared, while descended between us and the sun; a little the [illegible] the sun should be [illegible] distance was [illegible] my eyes distinguished it. — Returned by a more interior route, and reached Bolivia just before dark. On entering the town I was a little [illegible] and to find the Mining House, an ancient "Residencia Convento", dreary in its magnificence and [illegible] with portraits with the most imperturbable gravity — evidently kept up with a [illegible] and attention that it was a wonder the old gentleman was worn out at the [illegible]. I was delighted with the work and was very anxious to get Mr A. to print the [illegible] The work also excited the wonder of the natives of the place, but the [illegible] was satisfied because the old gentleman "kept more out of it" and [illegible] estimation of the town than just one, but he was assured that our want of time would not permit this. — Some of the boys [illegible] with the Sling to the Indians, who took it for a Deadly Weapon, and prepared to have him punished! — The portrait was executed to the satisfaction of the visitors to that place, among other things I saw on the table a spoon, fish and fork, which together with the [illegible] belonging to the set that should be considered [illegible] with the [illegible] of the place.

unless [illegible] to [illegible] and [illegible] of [illegible] the [illegible] and [illegible] [illegible] [illegible]

[illegible] so far from having anything to apprehend from the natives we congratulated ourselves [illegible] [illegible] [illegible]

[illegible]

[illegible]

[illegible]

was to find of, familiarly called the "Dark Ages" — the knife pointed at the throat of the
Traveller, the frequency of highway robbery, in the City, were warning them;
the mode of travelling, the frequency of highway robbery, in the City, were warning them;
the language, Moorish appearance, the mode like the Arabian were the fears of the Traveller
Religion, &c. —

May 26th — Started on foot, before my companions at 8 a.m. — After perhaps a
couple of leagues, my companions came up. At this time one of the travellers we had met
starting the morning threw the D. was greatly to be regretted — the other mules had
gotten fairly out of view. "Sir Walter" since leaving the night's ill. D. [illegible] the
mounted, and we commenced our work. From here we ascended along the banks that we'd
at the appointed place, and we were forced to wait all the way to Yaw [illegible] for
a sick man. — We got in a little before ten hours, and took up our quarters opposite the
Post of the Post House, the landlord as well as the inhabitants of the town [illegible] for
to Church. It was said that "he would be back" — but he did not come. Either this or
expect him. This was fast day with us, for we feared we should get to Arequipa and
we could not now get [illegible] to make time. Breakfast served [illegible] there was composed
for Stand but a breakfast in the Morning on which had been saved for me the day previous.
We found here a Gentleman who had [illegible] with, by whom we were
Hay treated him with the utmost politeness & very perspicuous [illegible] to
disadvantage; and he stated that he had [illegible] to Arequipa & he had arranged
with [illegible] to exchange his [illegible] without any [illegible] — not [illegible] the other
report. — [illegible] we [illegible] that we [illegible] with [illegible] & [illegible]
we had seen & [illegible] the [illegible] with them and we felt assured that we could
count on them in case of an [illegible]. [illegible] — [illegible] by
[illegible] by many means that there was a conspiracy going on, and [illegible] to pass, but
they should [illegible] in that manner. [illegible] had [illegible] by
by the Authorities we felt [illegible] to [illegible] [illegible] and [illegible]
they [illegible] in pursuit.

May 27th. We had not any very [illegible] that morning that there was
that we must [illegible] it, but if it should come it was not just the thing [illegible]
[illegible] to be [illegible] by such an inferior force. After all the difficulty was [illegible]
a good [illegible] our [illegible] condition — two [illegible] were sent, [illegible]
with them, and we were not sure that they had come then — my own [illegible] was
sent

Nov 11.

[illegible] with [illegible] two exceptions, they [illegible] [illegible] [illegible]

June 5.— Visited the Farnese [illegible], some [illegible] the morning. The young Count in charge were extreme polite and obliging and were evidently well informed with regard to all the objects of interest contained in the Palace. — They knew very well who we were, and all about our journey to the mountains, though how they became [illegible] of the information we were not able to learn. — We can suppose this which they owned out in the Gazette a day or two afterwards.

June 6th — Visited the Church of San Lorenzo [illegible] [illegible] (page 12). The Colonnade itself is perhaps as superior to the Cathedral and the various out buildings round, fountains, pillars, [illegible] as [illegible] is to any other piece of ground, the whole surrounded by a very high wall. — So that it is no difficult matter to get lost in it. It contains a Hospital and a gallery of pictures, some of which must be highly valuable according to accounts [illegible] [illegible] but I was not fortunate enough to get access to it — neither did I visit the extensive vaults below, but was told that the earth in which the bones are made was imported from Jerusalem on account of some of its peculiar properties. A good portion of the Christian Dead were interred in this building. When we consider its immense size, it will be no wonder, as it does not seem to be in any of the old. I returned one thing of worth, viz, the Shrine of a Virgin Saint! — The Cemetery is kept very neatly here and at Verano, but not without both but having a great deal of Stones & Gravestones about them; notwithstanding the Earthquake, they generally look [illegible]; and they are painted a stone colour of different colours so as sometimes to have a pleasing effect. Externally they seem to be very neglected Stab. "The new Chamber [illegible] since the first Pontificate in 1846; and notwithstanding that the property has been [illegible] about the Cemetery the number of priests has greatly decreased — San Lorenzo had formerly 200 Monks, now there are but 80"; and perhaps other places in proportion: still the Priests seem very numerous in the eye of a Protestant, perhaps owing in some degree to their [illegible] dress: — it is not for the lack of observation that there has been any deficiency, for the bells are kept ringing, from some Church or other, every two minutes of the day. — It may not be supposed that a class desirous to make of its immediate employment [illegible] would have felt very sensibly the general impoverishment of the Country.

Visited the Museum, which is at present but a small affair — [illegible] made interested by finding there a collection of native birds and Quadrupeds, perhaps

to in all will but just exceptions from the fruits cost of St. Cristobal. St. Cristobal
named to partake of Brazil and Guiana yet it was doubtful if the species were identical,
and was deemed to be worth to more careful examination. — Among Quadrupeds Buckland
the Viscacha of the vicinity and two species of Squirrel & Armadillo, both new to us. of
course from the other side of the Andes. Intended to have returned here afterwards to
Callao from Arica, but Mount Sorata & Apparent Lime on the appointed [illegible] was intended
to finding the plants for afterwards. Probably there is nothing more that I can explain etc.
Mathews. —

June 7th — Walked up the River on the south side, in at perhaps 2 miles journey
the "Cane-Cactus" and over the irrigated ground. The native cattle of the Province [illegible]
on pretty Compliment in all the fruit trees of Lower Peru on account of their red colour. —
After my dinner first in with an English Gentleman residing near the Spot (among the Cactus)
when the Province began to most thickly. He was to attend in the evening Buckland
and invited me to accompany him. He got at work in the fruiting way & had a more
thought of taking up with the offer, as there would be frequent communication with the Coast
and should have the arrival of the Specimens — time would by this time very apparent
but as Arica as more to Lima, our journey would have been much more delightful.
Cultivation being carried on at these places, shows that they are much lower
down than here & Arica, by any nothing of the Big course of the river to the Sea, from
that place.

June 8th — The Hydrology of the River presenting some interest as to the source
of the irrigation from the Cactus water, I they were Spent in fishing, with [illegible] —

June 9th — Took a walk down the River, on the south bank in all perhaps
2 miles; I an invaluable shelter of bits and a "tramway", more valuable observed down all
roads, in all probability the remains of "Inca roads". — In the evening visited the Bath
again — the play was a Tragedy in which the "Inquisition" & Confessor, [illegible] much
to its disadvantage.

June 10th — Went out to the Amancaes, and followed the ravine up, to the west
of the town of the Amancaes. Vegetation but scanty, consisting chiefly even of the
Tillandsia with its red flower and white flowered twining cactus the size of some quite large
plants; and a single Specimen of the "Amancaes lily" ([illegible] Last week its appearance —

its built was chiefly limited among the Ditches of rocks with which the country is spotted, producing shade and retaining moisture, in their interstices. The common Fig and Pomegranate were naturalized in a few spots. Returned to Dinner along the bay of the inlet. — First heard of the arrival of the Esquire.

June 11th. — At the afternoon walked to the Dinner at the Eastern extremity of the city and took the temperature of the water, and ground in walking as before mentioned. —

June 12th. — Visited some churches in company with some of the officers, and the Library. Dined with some English gentlemen. Messrs. Rose, Crosby & Thomas.

June 13th. — Went to Castle, where I found Mr. Brocklebridge at breakfast with a covered: — and got on board H. Brig, which got under way soon after and went out the inlet of the Town.

June 14th. — Sailed with the Brig in company and without seeing the shore I the Southward - passed and rounded the Island on the Eastern point. The Ground on the West coast steep and the white face of the coast is composed of Brig coral with which Sands mixed by the setting of currents on the Reefs, which is the cause. At noon a little projecting point, beyond which the city H. M. Island Bermuda was in sight bore. one mile distant eggs. at 2 the pilot boat, a fine young manly boy. boarded by the Pilot boat to the Town Quay we visited the wood yard &c.

June 15th. — At the officers went in the Launch in company with Lieut. Lieut and Lieutenant Mr. Ayres. Met with fair winds and arrived at the Town Landing. Visit another visit, in company with Capt. Long to the Dockyard Bermuda yard. The grave as designated by boards set up and painted white, with all the usual inscriptions, and were decorated with sea shells, some being strange to collect those of the same sort, and some of the kind, some rare. Most of them buried here were English or American and there were especially a large number from the U. S. Ship "Potomac". The men that met with their end either that caused regret were — The funeral to Church took this early Sunday, &c — It was now ascertained that a town must have happened in the Lieut and the U. S. Schooner Boxer. —

June 16th. — Arose at 4 A.M. and went in the Market-boat to Castle, where we arrived at Sun-rise. — Took a walk along the shore to the Southward perhaps in all 3 miles. About a mile to the Southward of Castle a kind of Bay with pebbles, partially beyond in height and precipitous towards the sea, extends along the coast as far as the eye can reach, apparently

June 18th — Walked to the point: the beach on the [illegible] side — Dead Corals, Hepatus, Cancer, Dorippe, also various Univalves [illegible] Bivalves, Echinus &c in a wonderful state of preservation. The sea was too rough for dredging going on. — Remainder of day occupied with specimens. — Private

Vancouver arrived. —

June 2d. — Employed with specimens with specimens. — The Lawrence sailed and arrived at 3 p.m. and with the rest; the Samarang arrived at 5 p.m. and with the rest; the Samarang was ordered to sail

June 21st. — Employed with specimens. — Embarkation of the Sick Wives Escort.

June 22d. — Employed as yesterday with the specimens as there was in the Morning but had not yet received the Samarang. —

June 23d. — Packing specimens as usual for Samarang. —

June 24th. — Packing specimens in the morning. — Ordered to the Eastward on a dredging Excursion. Name the ground that I should examine by Sir Edward Belcher and Captain Kellett also Lieutenant Pullen to keep further to the Eastward and Northward, and then I proceeded the Examining Officer to keep further to the Eastward but did not meet with any new Islands — Fine Weather. In the evening we had a general Muster by Captain Kellett and Lieutenant Pullen of the Officers and Ships Company.

June 25th. — Employed as usual early in the morning, and the Samarang was also under way. The wind was light & Southerly the whole day and by 3 o'clock was very little.

June 26th. — Packing specimens in the morning.

June 27th. — Sent on examination the Samarang in Company with Lieutenant Pullen and Dana. Kept the Ships to the eastward [illegible] legend, by superintendence &c. The first was not seen by the Samarang in returning the projection in good number and generally dredging: with Legend there were visible Island; to which I could not approach ..... Returning we carried a small Breeze in place of going round by the Ships. The small one together and adjoining were not of the Coasters of the Isle, which account also was made by Lieutenant Pullen of the Samarang Proportion and as such true, did not [illegible] with. Lieutenant Pullen was grateful that it would be, perhaps agreeable [illegible] the Ships receive Stores for unexpected pursuit. Returned to the Ships early [illegible] same evening.

June 28th. — Ordered again to the Eastward to examine [illegible] (Two prominent Peaks), on the Coast, about 20 miles to the Southward. Weather was [illegible] at the same time. The Samarang got under way in the afternoon, and at Midnight were at Anchor just abreast of the place and close in with the Shore.

June 29th — At daylight the day appointed to depart on the expedition [illegible] made that evening round by the impracticable [illegible] the usual manner, but continued preparing a raft with the [illegible] at right angles. In the meantime the steamer Highfield [illegible] on the Extra- ordinaire islands. — Two boats were sent with [illegible] the first [illegible] passed with [illegible]. All the rest of the ships stopped the night and [illegible] the first [illegible] the water and [illegible] Pachacamac islands. It was found that the rest of the battery [illegible] and a good deal of stores were there. On the 30th, [illegible] the [illegible] occupied in [illegible] and the boats employed [illegible]. The wind [illegible] the first bird and joined the rest of the [illegible] — In the evening [illegible] the "Peruvian" [illegible] with the mail from [illegible] which was received on board [illegible] the result. The first [illegible] that the boats towed the raft out and only those [illegible] appeared under the water. It moved very slow like the raft and its appearance and then, below afterwards, the men broke and their [illegible] [illegible] [illegible]. All were [illegible] [illegible] [illegible] and [illegible] [illegible] [illegible]

wished to exchange with me for mine, but we were not willing to give [illegible]. He had
worked his way through the Mt. Battle Pass — after the usual [illegible]. H.H.
on the back road and returned with the rest without encountering [illegible]
other Expedition which we could not understand. Regretting the absence of
Mr. Bowers we went on board, and were introduced, having a few minutes
while there — at Mr. Bowers". — Finally the steamer was ready and
an opportunity being kept that we were in with great delight, and without
just suspicion any luxury after, only a standing on deck at the head. — H. H.
had fortunately taken a Mackintosh with him, which he put on from his drawer, which the latter — his own — by the way which Mr.
Bowers had been learned of the nature of the surf, the steamer was [illegible]
expressions and opinions [illegible] [illegible] [illegible]. — H. H.
lost a Glove that on the deck already, with the [illegible] by [illegible]. [illegible]
it might be found [illegible], and H. himself left with. [illegible]
to observe [illegible] [illegible]. [illegible]
was left for the [illegible] of the [illegible]. [illegible]
as a kindness in doing so to the Mr. Postmaster. Brought [illegible]
that Mr. [illegible] [illegible] [illegible]

Here we [illegible] [illegible]
what they are with. — Here [illegible], and [illegible] [illegible]
before us. About half way we crossed the [illegible] by without [illegible]
[illegible]. At the [illegible] [illegible]
[illegible]

The [illegible] of Belcrumbo, or the "South" [illegible] called it is [illegible]
summit of a hill [illegible]; and from the North [illegible] of the "Jaws
of Death" as [illegible] by Humboldt, except that the [illegible]. [illegible]
of the hills [illegible] and that of the [illegible]. The [illegible],
base being perhaps 500 by 400 feet — at the S. Eastern extremity however, where the [illegible]
is more gentle, [illegible]. The [illegible] strength as
required as to support the [illegible], even [illegible] [illegible]; and as it
is natural to suppose that the [illegible] [illegible]
building — [illegible], it being rather peculiar in a Geological point of view (as [illegible]

[illegible] [illegible] [illegible] [

[illegible] ...

...

...

[illegible]

June 21st: arrived at the Wednesday at eight. Engaged with [illegible] to [illegible] by rail to Vienna.

July 1: — At Munich by this morning and we walked [illegible] to Vienna.

July 2. — Walked out to the [illegible] to the Town. — Capital hotel at which we put up [illegible] the Emperor — the Empress, & Archduke, & the Queen of Naples [illegible] — Here we received a letter which did not reach me, and it was [illegible] by the Consul. Did not [illegible] Mr. Wilson & Mr. Wilson & Mr. Wilson &

[illegible]

July 8th. — [illegible]

July 9th. — [illegible]

July 10th. — [illegible]

July 11th. — [illegible]

July 12th. — [illegible]

Nov.

July 13th. - Went on shore in the forenoon. Continued during the day. - Towards evening the Expedition, the Natives employed [illegible]

Vegetation.

The District we traversed, from the Bridge to the Summit of the Hill, and the [illegible] Island District, was well, & uniformly clothed with vegetation: yet [illegible] in Species. The Hill-sides [illegible] collections of Plants during the whole of the Season, and the Woods of Bursaria and Rose and Fern trees [illegible] in some places an [illegible]

Notwithstanding the variation of Climate, [illegible] we were not to be met with much [illegible] the Tribe — [illegible] the ground above it most: the Trees [illegible] will be seen [illegible] Island to the [illegible] in the lower region are confined almost exclusively to the Swamps, [illegible] same with the second, and not particularly [illegible] it is difficult to find [illegible] the third and fourth region [illegible] — [illegible] certain [illegible] [illegible] vegetation [illegible] the Hill Slopes [illegible] the Country.

It is remarkable that we [illegible] with any species of Orchis, Epacrideæ, Malpighiaceæ, Terebinthaceæ (except Schinus), Celastrineæ, Myrtaceæ, Casuarineæ, Ranunculaceæ, woody Rubiaceæ, Ericaceæ, Umbelliferæ (except Hydrocotyle), Labiatæ, Xanthium or Lobelia; — The District consists [illegible] the whole of Rosaceæ, Cucurbitaceæ, Filices, Chenopodiaceæ, Gramineæ, Compositæ and some Malvaceæ. The Helianthus annuus, which seems [illegible] as the Indian Corn, does not [illegible] this side of the mountains. The following list of about Families is rather a formidable one, but it will [illegible]

Dilleniaceæ.
Magnoliaceæ.
Anonaceæ.

Rutaceæ.
Ochnaceæ.
Cochlospermeæ.

Gesneriaceæ.
Ericaceæ.
Monotropeæ.

Cycadaceæ.
Palmæ.
Alismaceæ.

Peru.

Nymphaeaceæ.	Cesalpineæ.	Lysimeleæ.	Dioscoreaceæ.
Menispermaceæ.	Mimuleæ.	Ebenaceæ	Epiphytic Orchideæ.
Nymphaeaceæ.	Papilionaceæ.	Oleaceæ.	Bromeliaceæ.
Dilleniaceæ.	Rhizophoraceæ.	Loganiaceæ.	Nidularieæ.
Malpighiaceæ.	Combretaceæ.	Proteaceæ.	Marantaceæ.
Guttiferæ.	Melastomaceæ.	Thymeleæ.	Hypoxideæ.
Cistineæ.	Myrtaceæ.	Elæagneæ.	Orchideæ.
Violaceæ.	Passifloreæ.	Rosmarineæ.	Restiaceæ.
Droseraceæ.	Escallonieæ.	Aristolochieæ.	
Bombaceæ.	Cinchoneæ.	Piperineæ.	
Tiliaceæ.	Rubiaceæ.	Cornaceæ.	
Hypericineæ.	Cornæ.	Orobanchaceæ.	
Guttiferæ.	Loranthaceæ.	Scrophulariaceæ.	
Magnoliaceæ.	Bonicereæ.	Antocarpeæ.	
Erythroxyleæ	woody Rubiaceæ.		
Malpighiaceæ.	Piperaceæ.		
Aurantiaceæ.	Polygaleæ.		
Rhizobolæ.	Cyrilleæ.		
Meliaceæ.	Ilicineæ.		

Among the preceding families as many enumerated, will be found to be,

Compositæ.	Verbenaceæ.	On the mountains, —
Bromeliaceæ.	Acanthaceæ	Gramineæ. Coniferæ
Solanaceæ.	Amarantaceæ.	Salicineæ. Asteroideæ
Cacteæ.	Oxalideæ.	Gentianeæ. Lupineæ
Leguminosæ.	Valerianeæ.	Ericaceæ.
Malvaceæ.	Loaseæ.	Lenticeæ.

Peru is one [illegible] of which it [illegible] is necessary of special mention — viz. the analogies with the opposite [illegible] but for fully [illegible] it. [illegible] it was true that were found Peculiar Animals [illegible] the most important ecclesiastic [illegible] found at the very head of the list. From the same source we have received various [illegible] minor utility, and [illegible] in all probability, [illegible] greatly [illegible].

1. Tropical Region of Western Peru.

This Region is extremely interesting [illegible] position, and the [illegible] anything else we know of in America. It extends from 5°S. to 27°S., or from Payta to Copiapo, including generally all the Tropical Vegetation [illegible] coast-side of the first mentioned point. We found its eastern boundary about [illegible] above 9000; so that its width here is the same as that of the Granite; or [illegible] about 45 Geographical miles. There is probably no great variation [illegible] Northward, and we may assume the mean width of the whole region as about 50 [illegible]

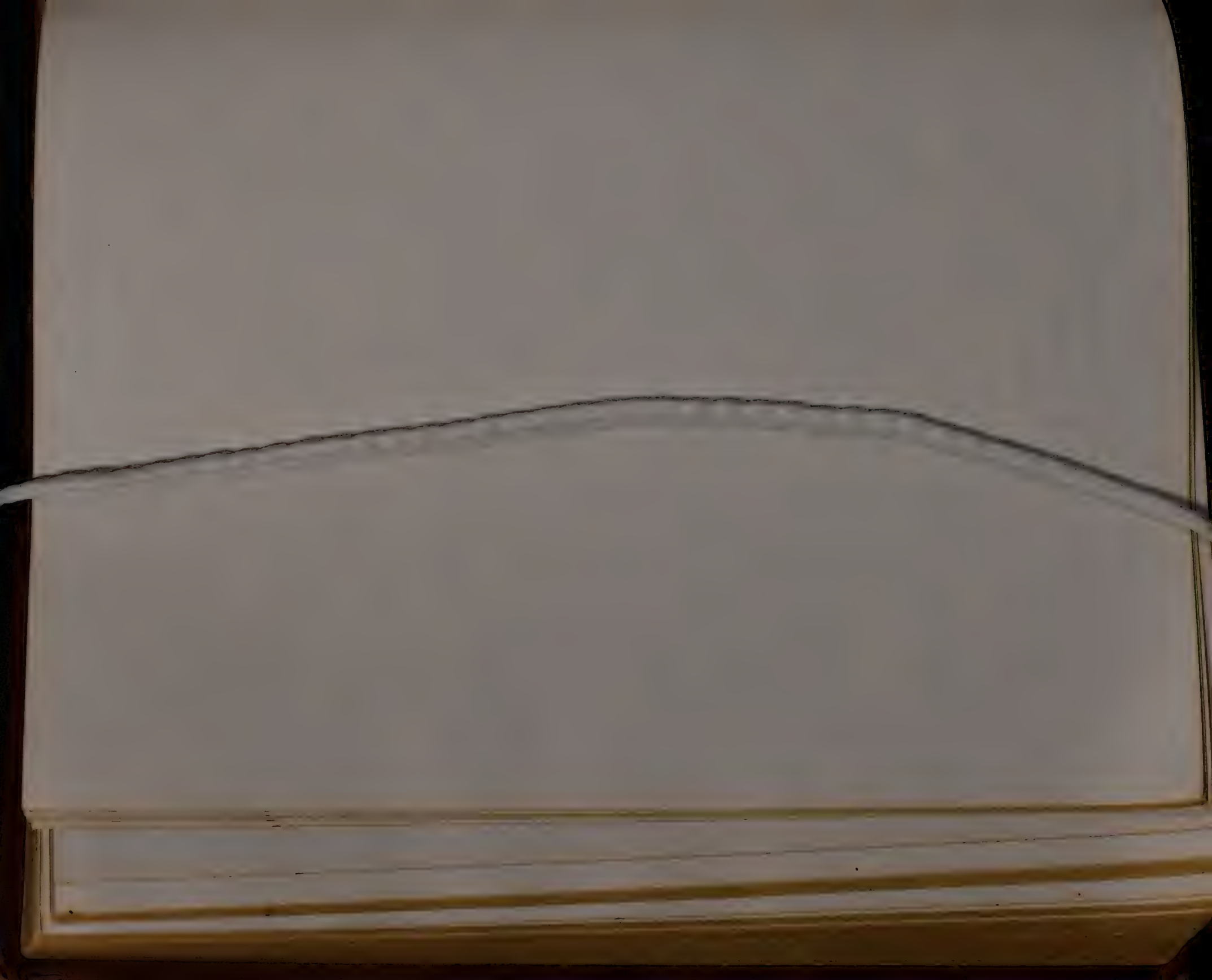
Note.

Peru.

The Eastern Cordillera appeared to be singularly green attributed to the rains, but we soon found that they had continued to prevail in the Interior during the whole of the preceding winter. Towards the Eastern border of the District we found the whole face of the Country mountain and valley, covered with a profusion of Vegetation, like the green of our Northern Forests. The ranges, that we had ascended to with so much fatigue — [illegible] — In the interior we also found a great variety of the Cactus tribe — [illegible] — and Malesherbia, — but especially at the precise Commencement of the ruins, the first — direction of these, we observed a white flower. This plant is [illegible] — Andes, to the Summit of the Mountains.

We before remarked that the Cordilleras mountains on the upper [illegible] the Sea and the South west, appear to be from it a great [illegible] — the same causes and the two seasons of the year, as annual events in the [illegible] and Summer; and to a great extent [illegible] during our stay at Lima. After being accustomed to the Aspect as above described, the Botanist is surprised to see green spots upon these ruins; which are found to be a species of Bromelia? (— [illegible] — we collected [illegible] a few days before, and it might [illegible] in full; and on the walls of the rooms [illegible] — we come now to those which may make their appearance at the present period. The first [illegible] ground is a Begonia in great profusion [illegible] from the Coast, gives it entrance to the air for a short period. Two species of Cactus — with fruits and the other with yellow flowers and white tube. The Compositae [illegible] — Among the fruits [illegible] — Among the proper situations for Cactus — and yet it is in Peru is rather famed for the Variety, but we were too early for the most. Among the fruits making their appearance at this Season we may mention an Eugenia, a Myrcia begin

Verse.



[illegible] with us — and a very few [illegible] from 15 to 20 ft. overspread the [illegible] by the river, at the way to Dover. It was only in the neighbourhood of [illegible] met with the luxuriance that animated us in the Thames.

On the wild hill of the down at Dover we met with the circumstance that took place on the gravelly slopes of Hampshire. The chalk flow of cool water from the hillsides — and here we met with the same variety of very beautiful. There grew in great abundance of [illegible] Calceolaria, Scythrum, a tall Equisetum, Hypericum Elodes, the [illegible] Justicia, and other aquatics Zannichellia, Potamogeton & Lemna.

On the west [illegible] the [illegible] [illegible] [illegible]

[illegible] was visited with the plants. The prevailing plants were with [illegible], a species of our Aristida Species, etc. It at once distinguished a [illegible] other species of the Agrostis tenuis and the [illegible] etc. in common. The Cassia Fagetiana was abundant on the [illegible] the bank of a [illegible] brooks the Sabil [illegible] a species; and on many [illegible] at present but open to such studies, Heliotropium [illegible] various, Agrostis [illegible] [illegible] [illegible]

bordering the canals; Here were the only Trees met with. Mosses & Hepaticæ formed a matted sward, and apparently confined to the same situations; perhaps a little more luxuriant on the Upland. — Of Equisetum two fine species were by no means uncommon but the Lycopodiaceæ formed entirely a striking Tribe, at least the large species formed conspicuous ones; Ferns did not make any particular show here. — The Grasses, though not abundant, yet did not occur in any great variety and appeared confined to three or four genera.

Cultivation. — From what has been said of the Climate it might suppose that it was one of those favoured Spots, capable of producing all the fruits of temperate as well as tropical Climates — accordingly we found Apples in great abundance and some variety, much superior to those of Valparaiso and Concepcion, [illegible], but do not now remember having tasted finer than the European fruits. The Grapes were fine, appeared in good condition, and Market some wine of the Country of good quality; but it is chiefly used for the distillation of "Pisco", the common ardent spirit of the Country. Some peculiar fruits are confined from the Coast. Olives are in great abundance, the best sort but did not succeed from the Coast and the Fruit of small size and bad quality. The Fig tree was often met with but did not bear fruit or bore but few. The Walnut (Juglans regia) was also common. — Of Tropical fruits Oranges were in the greatest abundance in the Valleys and Plantains. Rice is formed for the production of the Oranges, and it appeared not much liked on board, but by degrees we began to give in to the prevailing fashion. The best of the remaining fruits are the "Granadilla" (Passiflora [illegible]), and "Avocado" (Persea gratissima). The "Lucuma" (Achras), a native fruit, rich, sweet and very mealy when ripe is in great request and much prized. The "Tuna" (Cactus [illegible]) or Indian fig fruit was also met with but not in any abundance. Among the tropical fruits we also noticed Guavas, Chirimoyas; Pomegranates; the Papayo Indian Plum (Spondias) abundant but not in perfection; Pine Apples, [illegible] fine;

[illegible] We have seen [illegible] by us. Many of our common vegetables were cultivated, such as Potatoes, Carrots, Radishes, Cabbages, Parsley, the Chenopodium for "greens", Onions, Leeks,

[illegible]

abundant in bushes also a small [illegible] which [illegible]

[illegible] of the [illegible] [illegible]

shrub. Esq. [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible] general list of the plants [illegible]

[illegible] in Mexico.

[illegible]

Malvaceæ — [illegible]

Abutilon — [illegible]

Bombaceæ — [illegible]

Waltheria — [illegible]

[illegible]

Malpighia Armeniaca?, [illegible]

[illegible]

Polygalaceæ — [illegible]

[illegible]

Leguminosæ — [illegible]

[illegible]

Rosaceæ — [illegible]

[illegible]

Saxifragaceæ — [illegible]

Ribesiaceæ — [illegible]

Crassulaceæ — [illegible]

Myrtaceæ — [illegible]

Onagraceæ — [illegible]

Loasaceæ — [illegible]

Cucurbitaceæ — [illegible]

Begoniaceæ — [illegible]

Passifloraceæ — [illegible]

Cactaceæ — [illegible]

Umbelliferæ — [illegible]

Araliaceæ — [illegible]

Cornaceæ — [illegible]

Caprifoliaceæ — [illegible]

Rubiaceæ — [illegible]

Compositæ — [illegible]

Flora.

Thymeleæ

Lythrarieæ

Rosaceæ
Amygdaleæ

Philadelpheæ
Ribesieæ
Escallonieæ
Saxifrageæ
Crassulaceæ
Cacteæ

Umbelliferæ
Araliaceæ
Cornaceæ
Caprifoliaceæ
Rubiaceæ
Valerianeæ

Dipsaceæ
Compositæ

Campanulaceæ
Lobeliaceæ

Ericineæ
Vaccineæ
Diapensieæ
Styraceæ
Ebenaceæ
Oleaceæ

Apocyneæ
Asclepiadeæ

Gentianeæ

Polemoniaceæ
Hydrophyllaceæ
Borragineæ

Convolvulaceæ
Solanaceæ
Scrophularineæ
Orobanchaceæ
Gesneraceæ
Acanthaceæ
Lentibularieæ
Utricularieæ
Pedalineæ
Bignoniaceæ

Labiatæ

Verbenaceæ

Plumbagineæ
Primulaceæ

Amarantaceæ
Chenopodiaceæ

Polygoneæ

Thymeleæ

Lythrarieæ

Rosaceæ
Amygdaleæ

Philadelpheæ
Ribesieæ
Escallonieæ
Saxifrageæ
Crassulaceæ
Cacteæ

Umbelliferæ
Araliaceæ
Cornaceæ
Caprifoliaceæ
Rubiaceæ
Valerianeæ

Dipsaceæ
Compositæ

Campanulaceæ
Lobeliaceæ

Ericineæ
Vaccineæ
Diapensieæ
Styraceæ
Ebenaceæ
Oleaceæ

Apocyneæ
Asclepiadeæ

Gentianeæ

Polemoniaceæ
Hydrophyllaceæ
Borragineæ

Convolvulaceæ
Solanaceæ
Scrophularineæ
Orobanchaceæ
Gesneraceæ
Acanthaceæ
Lentibularieæ
Utricularieæ
Pedalineæ
Bignoniaceæ

Labiatæ

Verbenaceæ

Plumbagineæ
Primulaceæ

Amarantaceæ
Chenopodiaceæ

Polygoneæ

Flora.

Hyperomica scutellariaefolia N. ab. *Amomum* [illegible]
inquinitolia [illegible]
Salix Humboldtiana [illegible]
Ficus [illegible]

Lemna [illegible]
Pothos [illegible]
Magnolia [illegible]
Leandrobotrys [illegible]
Schnepfia elliptica [illegible]

Malpighia [illegible]
Cassia [illegible]
Passiflora Amazonica [illegible]
Cassia [illegible]
Hedysarum [illegible]

Olive [illegible]
Aquifolium [illegible]
Polygonum Amazonicum [illegible]
Alsodeia pyrifolia [illegible]

Leandrobotrys [illegible]

Cordia [illegible]
Cordia Humboldtiana [illegible]

Cassia [illegible]

Bignonia
Eleocharis

Leandrobotrys
Serjania [illegible]

Scutellaria
Pancratium [illegible]
Tabernaemontana radicans
Oncidium [illegible]
Bulbophyllum
Lophosoria [illegible]
Acrostichum [illegible]
Amomum [illegible]

Eugenia [illegible]

Cecropia [illegible]

Peru.

2. Western Cordillera Region

Mercury of various kinds were abundant every where and of luxuriant growth

Pen.

Peru.

3. On the "Flowers", or Inflorescence of Vegetables.

[illegible]

[illegible]

[illegible]

Peru

[illegible] Peru. [illegible] Peru [illegible] [illegible] [illegible]

Peru.

4. Alpine region of the Cordilleras.

[illegible]

The climate, and by the height [illegible] the Alpine region begins at about 11,000 feet above the sea, and extends to the limit of perpetual snow, which is about 16,000 feet. The region is characterized by the absence of trees, and the presence of a few species of shrubs, which grow in the form of cushions, and are covered with a dense mass of flowers. The soil is generally very poor, and the vegetation is scanty. The most characteristic plants of this region are the species of the genus Werneria, which are found in great abundance. The flowers are small, and the leaves are very small. The stems are short, and the plants are usually found in clumps. The roots are fibrous, and the plants are well adapted to the cold, dry climate. The region is also characterized by the presence of a few species of the genus Senecio, which are found in great abundance. The flowers are small, and the leaves are very small. The stems are short, and the plants are usually found in clumps. The roots are fibrous, and the plants are well adapted to the cold, dry climate.

This region is distinguished by the [illegible] from the [illegible] of the great plains of the [illegible]. It is marked by a very [illegible] line of demarcation; the trees grow more [illegible] as the elevation [illegible] increases, and the [illegible] are [illegible] by the [illegible] (the [illegible] [illegible] [illegible]

[illegible] Alpine Region [illegible] Valleys [illegible] Gramineæ, Cyperaceæ & Ulvaceæ [illegible]

; is dependent of the Waters, and the Heat, Rites [illegible]

. . . . . in the style of the rocks.

The Alpine Compositæ and Ranunculaceæ [illegible] but the Saxifrageæ are opposite [illegible] Alpine district [illegible]

; and the rest of the Region.

It is to the principal [illegible] in which [illegible] is more gentle, the slope is covered with a luxuriant [illegible] Gramineæ, [illegible] that [illegible] Rites [illegible] Ferns [illegible] rocks, in their crevices &c, we find Ferns, Rites . . . . . and other plants [illegible] Region to the region below. — 2. On the western slope of the crest, and [illegible] the [illegible] Gramineæ & the [illegible] vegetation [illegible] 3. The [illegible] of the [illegible] gentle [illegible] Alpine [illegible] Gramineæ, & [illegible] Ulvaceæ [illegible] Rites [illegible] Alpine Region [illegible] Saxifrageæ [illegible] Compositæ [illegible] Ranunculaceæ [illegible] Ferns [illegible] Rites [illegible] Alpine [illegible] Gramineæ [illegible] Ulvaceæ

as the most ornamental plants; and among them are perhaps some new Genera, at least if we may judge from habit: besides the usual tints of blue & white &c, some red flowers of deep red! — There were three stemless Compositae, at least so in external appearance, conspicuous only from the conjested mass, which almost required a magnifier to render visible their solitary flowers; again exhibiting a counterpart to the Alpine Compositae of Tenerife. — The depressed Bacchar-ises were extremely common, growing in dense beds, and though in reality struggling shrubs, their flowers and foliage were only "even with the surface". — The Caryophylleae were abundant, but chiefly the inconspicuous Saginea or Arenaria: with rigid leaves, forming dense matted beds of a thick woody, subterranean stem. — The Alpine Umbelliferae were less abundant than in the Southern part of the Tropic, yet not unfrequent. — The blue flowered Lilac & Veronica, equally abundant plants, also were the genuine Alpine sort; and the same in a greater or less degree was true with other Liliaceae. — Annuals, with just a few exceptions, wanting. —

Of all the spots we visited the bright slate Micaceous afforded the most interesting Alpine plants, finally perhaps on account of the dampness, and we much regretted the shortness of our stay at this place.

The following is the List of Plants collected in the [illegible] region of the Cordilleras. [illegible] it is perhaps needless to repeat the names of all, since should some have been already noticed.

Calla . . . . .

Werneria pusilla . . . . .

Oxalis (L.) . . . . .

. . . . .

. . . . .

Caryophyllaceae . . . . .

Chenopodium . . . . .

. . . . .

. . . . .

Saxifraga . . . . .

Arenaria . . . . .

Lycopodium . . . . .

Alchemilla . . . . .

Lilium . . . . .

. . . . .

Alchemilla . . . . .

Agrarius . . . . . 41 ; 42 ; 43 ; 44 ; 45 ; 46 ; 47 ; 48 ; 49 ; 50 ; 51 ; 52 ; 53 ; 54 ; 55 ; 56 ; 57 ; 58 ; 59 ; 60 ;

Vencevil . . . . .

Vencevil . . . . .

Vencevil . . . . .

Vencevil . . . . .

Vencevil . . . . .

Vencevil? . . . . .

Vencevil . . . . .

Vencevil . . . . .

Vencevil . . . . .

Vencevil . . . . .

*Vencevil

Index

Extempore [illegible]

Mapa

Water-spaniel

Agouti

Brown

Horses

ejusd.

Tibia [illegible]

Arrangement of the Collection.

The limit or boundaries of vegetation there, differ from the Extremities of N. America. The Flora and other Productions, they must differ widely from the Western, as first according to the Portuguese, are in the immediate Neighbourhood of the Equator, many productions; the Circumstances of Moisture, &c. which may be found also in many islands, some Rubiaceae, Escallonieae, and Fernstremiaceae. Some from the Cinchoneae & Epiphytic Orchideae. [illegible] found. — And finally at the Eastern Coast of the Andes, on those a Continuation of the vegetation of Guyana and Brasil, the Aroideae, Bignoniaceae, Melastomeae, and many Euphorbiaceae Palms &c. &c. — Though there still seems to be a very great difference in the Species. — The greater portion of the plants described in the Flora Peruviana were obtained in the Cordilleras districts

Flora.

The [illegible] [illegible] [illegible]

Peru.

Ulva . . . . large fistulous - cut as Cabbage Leaves &c.

Encoelium . . . . globose cellular . cells [illegible]

Zoology.

[illegible] Zoological features [illegible] [illegible] [illegible]

Peru.

Under the [illegible] it, let pass unnoticed [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

Summary.

[illegible] [illegible]
[illegible] [illegible]

Under [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]

Their [illegible] [illegible] [illegible]

Under [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]
[

Bees.

Considering the different circumstances under which bees live, it is difficult to form a correct opinion of their habits. [illegible] [illegible] [illegible]

Peru.

Peru.

Fringilla ..... a yellow finch, much like the ♂ in colour, but with gray head, & red wings, was common in the same manner about houses at Pisac – also met with at the commencement of the cold region of the Andes. –

Cypselus? ..... small & apparently the American form. – Middle sized brown, with neck and shoulders white. – seen near Pisac

Dryobius? ..... corresponds with spiny tail. Bank; almost always in company. Obtained by shot. ..... near Pisac and pursued through the Yungas. –

Hirundo ..... like an White's swallow, but smaller. Common at Lima &c. building under the eaves of the Palaces &c. –

Vermivora ..... with light crimson, & white spot on wing. ..... Found about the bank between the walls of the Pisac, eating caterpillars on the vines. –

Troglodytes ..... near Yanga –

Trochilus ..... Male little Humming bird. "Tola" white. – in moss on Cinchilla.

Trochilus ..... The great Humming bird – Inca Rica Orientis.

Alauda ..... resembles the American form – Many of the birds which build under the Eaves.

Psittacus ..... on our journey to the Cordilleras we first met with Parrots at Yaya just at the commencement of the mines and where the ground began to grow free from the Vegetation. They were noisy & in numbers; but never near enough to determine the species. –

Psittacus ..... A flock of small met with in the valley of the Amazon near Tarma, small & apparently of a different species; but from not able to secure them positively. –

Psittacus ..... strongly resembles the former & plumage & size, tipping the long pointed wings – head, neck & breast of a dull red – with the other, tail much as in Psittacus, feathers black with white tips. Body dull green. Shot on San Lorenzo, by Rev. M. Elliott.

Peru.

Corvus? . . . . . In the vicinity of Callao I once heard a note much resembling that of our Common Crow, but being unable to get sight of the bird, I am unable to assert positively that this genus is found here.

Columba . . . . . a small Ground Dove, the plumage [illegible] of the head of which is exceedingly common throughout Western Peru. The legs are red.

Rallus . . . . . A small dark coloured Rail, [illegible] in the vicinity of Callao.

Gallinula . . . . . The sanguine coloured varieties (Testing) of the Red [illegible] are frequently among the rocks near the beach; and the bird has [illegible] specimens.

Charadrius . . . . . a [illegible] of our Golden and Canada Plovers are frequently in the vicinity of [illegible] and [illegible] are [illegible] specimens, [illegible].

Vanellus Cayennensis . . . . . was not [illegible] from the rest of the [illegible].

Numenius . . . . . like our Esquimaux Curlew. Bare of lower mandible reddish flesh coloured; [illegible] reddish legs [illegible].

Ardea . . . . . [illegible] in the vicinity of [illegible]

Ibis . . . . . of the [illegible] White Heron [illegible] [illegible] by [illegible] [illegible] of wing; [illegible] will [illegible] upon any [illegible].

Tantalus? . . . . . A single specimen of this genus [illegible] with the flock of White Ibis, but was [illegible], and was held downwards when the bird was on the ground, with the tip of the lower mandible kept horizontal. Another peculiarity was, that while flying the head was kept [illegible]. — [illegible] [illegible] common, but [illegible] at a distance from the coast usually [illegible]. — The [illegible] and beak, which [illegible] the gullet and [illegible].

Ton.

Tonart . . . . .

Akkord . . . . .

Intervall . . . . .

Dur . . . . .

Moll . . . . .

Kirchentöne . . . . .

Takt . . . . .

Taktart . . . . .

Auftakt . . . . .

Betonung . . . . .

Rhythmus . . . . .

Motiv . . . . .

Thema . . . . .

Melodie . . . . .

Harmonie . . . . .

Kadenz . . . . .

Modulation . . . . .

Orgelpunkt . . . . .

Vorhalt . . . . .

Orgel . . . . .

Register . . . . .

Manual . . . . .

Pedal . . . . .

Anm. [illegible]

Anm.² [illegible]

Anm. [illegible]

Negative.

[illegible]

Negativ. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Negativbog. [illegible]

Verb.

Fowl.

Gobbler. . . . (Bird or bird like) - birds - on ground by blood - at or in the water - with short, or thick bill; but in water not as long - I am - the - in my - the - water bird; not on land by Mr. Hunt. "Not even the Eagles of the air".

Feathers! . . . Each - not common type each; and two the point. Of a - under white. The tips of the - of a Hunt - tips or - more - - common, in the - in the - ; connected like the - of - in - the - bird - - the - - -

Peru.

Belone . . . . . 2 ft; a silvery stripe on flanks; depressed; tail cut. Local name Bolao market

Mugil . . . . . 10 by 3½ inches, with round tail. — M. longipes of Cuvier? Scales serrate at apex; a row of black spots on sides. — Common in market. —

Clupea . . . . . 10 inches; genuine - headed

Clupea? . . possibly different, a table in upper jaw; color & coat

Engraulis . . . 6 or 8 — Common fish in the market with the following characters of the Anchovy in the wide bands of dark blue, bordered at a little distance by the discolouration of the flesh. Sometimes in general form & mouth like the following species; with three large yellow scales on the side, equal to each other in size; but in general they are smaller & fatter than the following. Encountered in the market during the year, but neither they or the following are to be found in the waters of the bay. Flesh soft & delicate, but not rich. Local name Bolao

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Anguilla . . . . of 2 kinds. One very distant with the ventrals small; mouth rather large & teeth inferior numerous; 12th dorsal. —

Hemiramphus? . . . . jaws of equal length including beaks; 14 by 7 inches; eyes of lateral; pectorals short; scales on side 5 by 5. — Some specimens were even much larger than

Callorhynchus . . . . apparently same as Chilean - (60) by 30 in.

Lyzgena . . . . . head of the same shape as Z. malleus

Raja . . . . . very young; long tail with a row of short spines above. Sex unknown

Insects.

For some remarks on the Entomology of Peru, see above (vol. 1) — It is sufficient here to state that Insects are by no means rare in Western Peru, and that the intending field observer of the Entomologist — will find in the traditions, and in all probability in fact — even Peru — Particularly that these tribes which inhabit the Coast region are living in the district known.

Satteres

Rhomites.

Rhomisoid

Agathicl

Araneo

Elaterides

Cicada

Cicadoid

Scarjis

Scarjoides

Scarjaeus

Scarlogeo

Hyg. Hesperus

Cicindela

Procinct

Harpist

Hermit

Carabicl

Tenebrio

Curculio

Longicorn

Telephorus

Peru.

Neue.

Annulata

[illegible]

Volutacea.

[illegible]

Dec. 1st. — At Newcastle I engaged a man to take me to Hexham, and we started in a gig at 11 o'clock. The road ran [illegible] the Tyne, which is a fine river, and the country is very pretty. The road is [illegible] and the [illegible] are [illegible]. The [illegible] is [illegible] and the [illegible] is [illegible]. The [illegible] is [illegible] and the [illegible] is [illegible]. The [illegible] is [illegible] and the [illegible] is

S. E. Australia

[illegible]

[illegible]

Sept 7th — [illegible]

Sept 8th — [illegible] found [illegible] Sept 9th [illegible]

Sept 10th — However [illegible] with our baggage we were [illegible] to walk [illegible] being warned from Brailford, that [illegible] should we get lost, and moreover at some [illegible] thereforce Mr. [illegible] Mr. [illegible] collecting by the way, and [illegible] Marsh Inst. —

Sept 11th — [illegible] Inst & [illegible] last night. [illegible] make its appearance — at length it was thought prudent to [illegible] forest afforded us shade, and [illegible] Pinus ponderosa predominant, which Inst first attributed to mallow in bods. [illegible] Pinaceae is [illegible] We had supposed that the trees had been [illegible] that it was through some misunderstanding, but the features if anything was considered improved by the [illegible]

[illegible] arrived [illegible] the evening previous by the [illegible]

Dec. 15th — [illegible] the [illegible] morning, [illegible] -ing the river bank till stopped by [illegible] and then [illegible] brought to on the vicinity of [illegible] route — [illegible] followed [illegible] the [illegible]

Dec. 16. — [illegible] [illegible] [illegible] before [illegible] [illegible] small being [illegible] [illegible] [illegible]

Post Post Office.

[illegible] the Post Office [illegible] [illegible]
bearing the [illegible] [illegible] [illegible]
to [illegible] [illegible] the Post Post Office [illegible] [illegible]
the [illegible]. The Post Office [illegible] [illegible]
to [illegible], [illegible] [illegible] [illegible]
and [illegible] [illegible]. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible]. [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible]

[illegible] Australia [illegible] [illegible] [illegible]

[illegible]

Climate.

[illegible]

Chile; its most marked feature seems to be the inequality of the rainfall, a [illegible] succeeded by floods. — We were assured that [illegible] [illegible] [illegible]

[illegible]

Vegetation.

[illegible] connected with the vegetation seems to speak a different order of things.

[illegible] Australian [illegible] together with the Eucalyptus, with the limits of the land itself; and but a little [illegible] Norfolk island and Lord Howe's island, concerning which [illegible] Australian plants have very commonly their leaves set edgewise; or not presenting the broad to the Heavens, is literally true.

position. It was not till the 2d day of the June trip; but if I may
express it, something intermediate between the bitter and the sweet. It
was readily recognised by the tongue, though the positively disagreeable
first sensation in the throat. — The Natives of New Zealand and New Holland, when by accident
of New Zealand and New Holland, when by accident
appearance of the tribe. —

There is besides among a very general presence of asso-
ciated in this tribe plants, as of the natural Orders
& Magnoliaceæ, the Rubeæ and other Rubiaceæ, some Euphorbiaceæ and
Rutaceæ. and
the Umbelliferæ, Solanaceæ, in
the same habitat of plants were evident to me in the Tropics, with the
diminished bound Rubiaceæ.

This is perhaps a convenient place to notice N. Grisea,
Xanthosternastilis, which is often of by all writers as quite common,
but by no means the conspicuous object we had been led to expect; — in-
stead of flowers it bears scarce, a leaf of grass or branch with a finger
-feet stem, like that of Grass or Cyperaceæ; — and not altogether
upright. —

Other Rubiaceæ besides of the ordinary kind were not visible and
they were no variety in a Vegetation so varied, was some what surprised
to find an absence from the usual character. There was a perceptible ten-
-dency to a diminutive in size, which formed the more remarkable, as in
Natal we had the reverse any other kind of patience. with us in the
Table plain, were there any great disposition in the Rubiaceæ plants,
to run into spines. — Rubiaceæ for a climate expected to exist, spines found
unusually rare. It is not to be known if the Grasses were not
very abundant in the district which were not in flower.

In the Mountains N. was not a rare plant for the temperature
& the heats of summer in the plants Euphorbiaceæ and Magnoliaceæ of the
Cyperaceæ. The Mountain gentlemen & the river; were found with the wild
leaves saw succulent leaves; — and when found, they were not as broad as

as follows; — having for the present the title of Tropical Australia at S.L. 25°, or as used in other parts of the Globe; and which is confined by natural boundaries of Mountain Ranges &c.

1. N. Tropical Zone; — including both the Islands and the neighbouring continent of the Indies; but not stretching along them to the parallel of 25°.

2. South East Australia — or perhaps it would be better to say East Australia. Which was the only region visited by me.

3. South West Australia. — Which region is comprised in my Journal and all succeeding visits. The productions thought having the same general character, but well distinct from those of the East Coast.

4. Of the Interior Plains; — Which may very probably prove both, as I would, and more resembling Asia, viz. in various respects. — Mitchell speaking of the "Darling" &c. Eyre and Sturt (or Mann &c.) says the "afford traces of having been subject to great variations of Climate which is accounted by the Rains of Eight". It was then also that Fossil were found occupied by Salina plants." The Interior Salt Lakes &c. Mann &c.

5. — North West Australia; — Concerning which scarce any Notice of the Vegetation. What accounts we have of it, would lead us to suppose it still more arid and desert than any other part of the Continent, and still more so, being the habitat of camels &c. —

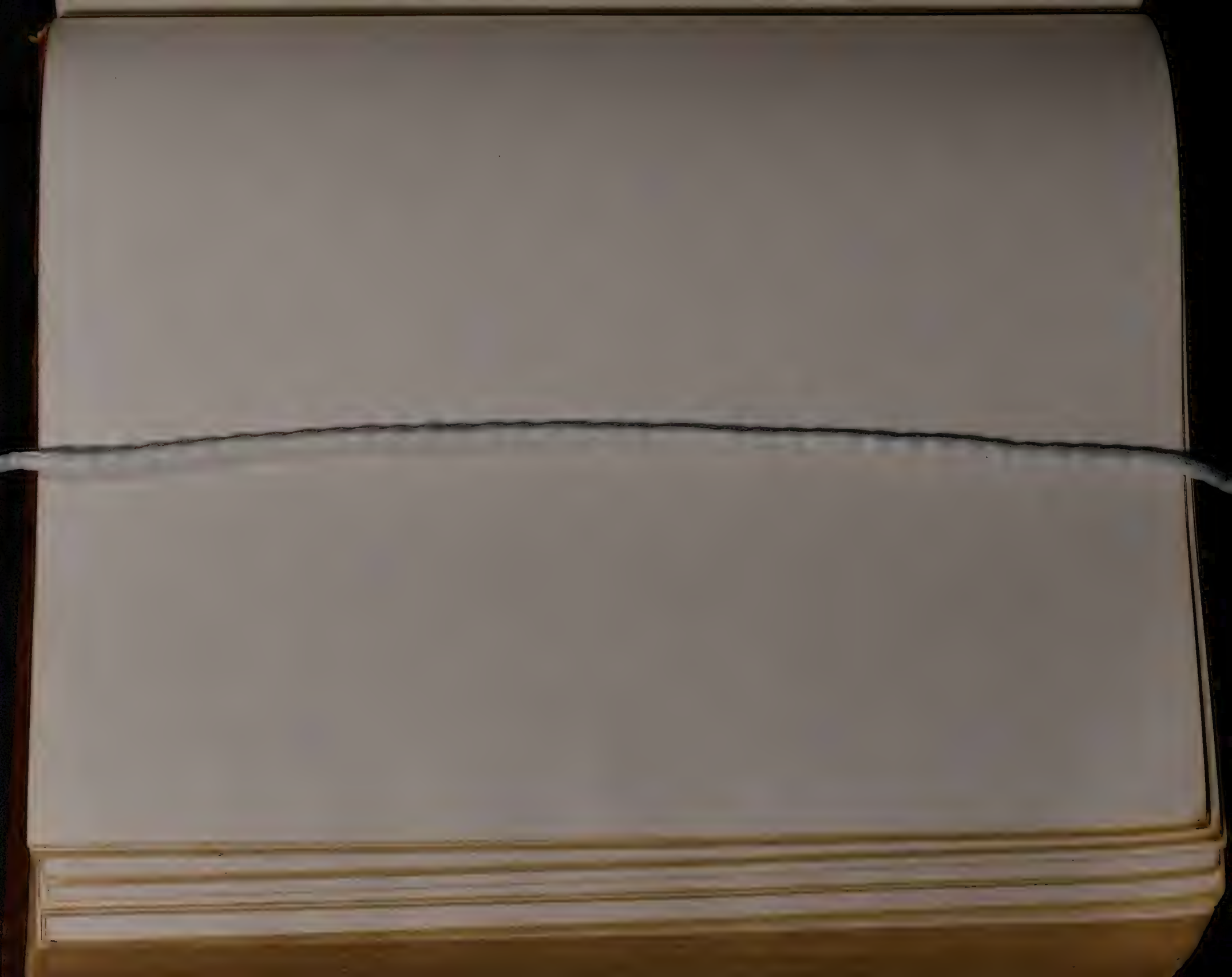
6. North Eastern Australia; — including also the Gulf Country & the Coast. It is this region that principally appears to the Indian Archipelago.

N.B. _____ ; — As it is to be hoped, Mitchell, Mann &c. have traversed in the South East part of Australia, there must be some Alpine Region. Some Lofty Summits were there seen this account of which Vegetation &c. Sydney.

Perhaps it will be well to say a few words on the
plants that were noticed although they are not in bloom at
at least, till we can procure some information respecting them.

Amidst the many plants of Australia which
deserve to be specially noticed, the Eucalypti
the most remarkable, and the most important
as they are the trees which form the principal
vegetation of the country. The Eucalypti
are trees, which in their native country
among them attain a height of 200 feet.
Their leaves are usually alternate, and
are hard; and their flowers are in umbels.
The Eucalyptus tribe, though the genus might be
habit; I noted one species with Solitary
Sida-like flowers to which I gave the
So that we may add Eucalyptus, Pittosporum, Leptospermum, and
, Palimum, Hypericum, Myrtle,
, Mesembryanthemum, Ruscus, Epacris, Lissanthe, &c.
, Hovea; and in great abundance Leguminous tribe,
some, did not present any unusual, or at least remarkable forms.

Except with the Mesembryanthemum. Some of the species
noted, there was about that resembled the more southern of Europe or
Northern Climates, — such as Ranunculus, Linum, Viola, Cerastium
Viola, and perhaps other genera of the Umbelliferae, Leptidiniums; Euphorbiaceae,
or at least plants resembling them; the Stellarieae tribe; Eryngium, Rubus; a
genus



Juncus, frequent, with all the habit of species; a mixed detail.
; Bauera, or the Tasmanian bell; the
flowered Lobes if rather; , Australian Epilobium,
Viola.

South American analogies. — Most [illegible] with the appearance of many kinds of S. American genus: — this [illegible] being the patient moved in geographical position and in general climate opposed in its botanical features of all Tropical Africa. Mesembryanthemum, Oxalis, Aloe, or Asphodelus, abounding, Lythrum, Epilobium, Cyperus, Juncus, Eriocaulon?, [illegible], Calandrinia, a bell of Polygala, [illegible], an Orchis with the habit of Pterostylis, and an Oxalis with all appearance of Oxalis.

Tropical African analogies. — [illegible] also exist in Australia but [illegible] Asclepias, Nicotiana, Solanum, & also in Nicotiana.

Hibiscus & other Tropical analogies. — Tropical forms [illegible] generally, Acacia [illegible], and [illegible] presence of Epiphytes; Melianea (not known from by ourselves), Loranthus, Epiphytic Orchideae, Ficus, Dillenia, Magnolia, Gleichenia, Pittosporum, Crinum, Cissus, Broadleya, Cedrela, Rhododendron, Cassyta, Psilotum, Dipterus, Utricularia, Ischaemum, Nepenthes, and Mimosa with its genus with [illegible] Victoria. — The Acacias too, with the Myrtaceae, we have been used to [illegible].

South African analogies — [illegible] nearly with Australia, in position, climate, and [illegible] the part of it [illegible]. Australia [illegible] presents anything in common, [illegible] Most of the extensive tribes of the Proteaceae are confined to [illegible] but there is [illegible] common; — only as we [illegible]

[illegible] Tropical [illegible] Vegetation [illegible] [illegible] Hunter [illegible] [illegible] [illegible]

Thomas Reid explains — in a letter by the by, dated Huntsville, with a botanical drawing, and a parcel of grass seeds. — In the enclosure the trees are distinct and the nature of the soil is such, that the trees do not easily crowd; and it is possible to drive and ride in a gig for a mile or more without any difficulty. —

The trees are generally of good size and straight, rising from 40 to 50 feet; and consist of a variety of different species of Eucalyptus, that are the most mentioned in my journal as cited. The species are numerous and are distinguished by the bark and other marks, more readily by the natives and botanists, than by the Colonists. They are known by their names as distinguished by Sir Joseph Banks, - Gaertn, -

— The species are noted quite common, with the bark is smooth and whitish, that it actually has the appearance of being stripped through. The leaves have a generally powerful aromatic flavour, like camphor; and the most strongly scented is pallid, i. e. pale, and which will not float in Water. —

What the most remarkable circumstance is that they do not afford actually to afford shade! — and the traveller in the "bush", as is called here, finds scarcely any protection from the rays of the sun. The new leaves grow in the direction, i. e. in a plane with the branch and not vertically placed, and the branches do not form canopies. The caoutchouc trees in general bell in proportion to their branches — many of them have the umbrella top, which is so frequently represented in views of the Botanic Bay; but in all the trees are extremely few, and the foliage thinly scattered; the leaves besides hanging vertically, as before remarked. — Whilst I was there, from the heat, which was 110 to 120 in the shade, I was extremely anxious to find a tree under which I might sit, but in vain. However strange the appearance of the trees may appear, that of a shelter is not at all appropriate here.

We are again surprised to find no underwood, or small plants — that scattered shrubs may not sometimes be met with — but in general it is only found with the grasses and the Acacia tribe, which is not always green, the nature and the dark appearance of the foliage of

the

[illegible] especially Orchid, Undergrass, Algae, Fungi, Ferns, Lycopods, Gleichenia, Osmunda, [illegible], with the ground-layer of Mosses, Hepatics, Lichens, &c. [illegible] Epidendrum and many Orchideae; Campanula, with Gaultheria, Thibaudia, Vaccinium, Andromeda, Befaria, Rhododendron, Cavendishia, Thibaudia, Gaultheria, Pernettya, Gaultheria, Andromeda, Befaria, Vaccinium, Cavendishia, Thibaudia, Rhododendron, Befaria, Andromeda, Vaccinium

we usually considered as peculiarly characterizing Australia. [illegible]
made one in the Pyrenees, Spain; two in Nice, Italy; [illegible] with the usual pinnated foliage; and near the shore, Eucalyptus; a Eucalyptus, [illegible], besides what were to be found in ravines and along the banks of streams.

It is time now to relate the other two which we found intermixed with the Eucalypti. These are in the first place a Casuarina, called by the Swan River people the silkwood tree, which must have been [illegible] in this country, they often call it the pine, as it appears to [illegible], which is often met with in small patches, in dilatations of the river, or along the banks of streams. Its mode of growth was somewhat different from the Sydneyan species [illegible], the twigs being slender and the branches not so long — indeed it reminded me very much of our Scotch P. Strobus, when young; except that the foliage was not so compact, and it yielded but little resin when struck by the axe. It is also [illegible] mixed with the Eucalypti and not near so numerous as the other allied Myrtaceous tree

of large size and of very different appearance, but exceedingly like the [illegible] are opposite. — The "Banjong" tree, Stercularia heterophylla, [illegible] examples of which were met with near Perth on the edge of the forest — it did not seem to exceed 30 feet in height, but was [illegible] and the foliage was [illegible] of the Yew tree; the tree being [illegible]. Here and there in tidal water we sometimes found the Avicennia intermixed; this is a Leptospermum? [illegible] not very different from the usual kind, except that it grows to a small size, from 20 to [illegible] feet in height. — The [illegible] of districts in which the "Applebush" of the Colonists was interspersed, [illegible] what part was [illegible] Indeed we did not learn, and it was not [illegible].

Mitchell in his various travels reached the parallel of 29° [illegible] the Northward and Westward of Swan River; but does not appear to have found any distinct change in the vegetation, except that the Casuarinas as predominating tree over the Eucalypti. — On another journey he speaks of "forests of the Australian Pine", Callitris on the Cornbelias [illegible]

[illegible] the Mainland of Australia; & beyond the Blue Mts. as far as I
made out, east of Sydney.

It is true enough that this Country upon which we have
settled as yet, is in fact a mere strip of coast and low
district; which does not by any means give a fair idea of the Flora
We are I assure again and again told, for [illegible] that the
interior [illegible] Country is to be found by the time I get there
now to be spoken, a very good job" — for the present, it is not a matter
to call it so; and the fact is as this that it takes a month of
Travelling to produce a single plant.

Environs of Sydney. — These would I think in the language
of the botanists be termed a "forest" — not that they are like
the evergreen, and they seem to have been much more frequent at the
first settlement; but a great part of the country appears to have been
always occupied by bushes. — Small trees of Eucalyptus however
are not uncommon, together with Banksias, and the Exocarpus,
having much the habit of a small Casuarina; the Banksias &c, of
which there were several species, the general run of

. . . . . Of the great variety of the larger evergreen
shrubs, we may enumerate, Leucopogons and other Epacrideae . . . .
. . . . ; Telopea, which however was not in flower, Grevilleas, . . .
— Dambidia . . . . . and other Proteaceae; Angophora,
Leptospermums, Metrosideros, ... and
various other Myrtaceae; though the leafless Genera seemed rather rare,
there were the Monotoca Leptomeria, which might be mentioned here,
& Dillwynia, Pultenaea, Gompholobium &c, almost all yellow flowered;
Correa, Zieria, Boronia . . . . . of the Rutaceae; Eutaxia is
ravines; and especially the Leucopogon usually here in place of the "Christ-
mas rose"; [illegible], very common; . . . . . be . . .
. . . . . — Among these again, grew a great variety of
diminutive shrubs, which both here and in South Africa, seem to replace
in

in many way to the [illegible] portion of N. S. W. Triptera [illegible]
of them are pretty upright and rigid; and the [illegible], though not
Hamiltonia yet is bright, and yet dark in [illegible] and has very fleeting [illegible]
May occupy the [illegible] of the 4 preceding; Andersonia, Variabilis, Melaleuca,
Epacridea, Pultenaea and Leptospermeae, and many of the tall [illegible]
Proteaceae, or Heath-like in their [illegible]. Of these are mostly [illegible]
tabil, the Hypocalymma; Leucopogon [illegible] pectinatum; H. [illegible]
Darwinia citriodora with Myrtus communis; Thryptomene;
[illegible]; H. Baeckea ericoides with [illegible] rosea of the Grampian habit; [illegible]
[illegible] H. Sphaerolobium, also small like a Galium, but the flowers are [illegible]
and other Rubiaceae;
We meet with the Boronia, whose singular pitchered [illegible] and pl-
-ossy leaves; and H. Hilly, named Rodolobium, is made at once with the ordi-
-nary glossy [illegible] of the Leptomeria.

The Melaleucas plants have a very [illegible] standing, though they
formed one of the chief [illegible] of the first district. Here two of the first plants
were Grampian Leptospermeae, and especially the dwarf [illegible], Nesodea;
[illegible] two genera, as well as Melaleuca; Calistemon, Species
common, especially the [illegible]; with broad-leaved [illegible],
[illegible]; H. two-leaved Uperculariae, with a [illegible] re-
-quite common; Conyphlospermum [illegible]; Eucheuseias, or plants resembl-
-ing them; H. H. Ac-Hilandrae and Ericoid [illegible]; the heath pro-
-quite common; Gomphocarpus and other Asclepiad; [illegible] Ixia &
-Sisyrinchioid and Sisyrinchioid plants; Goodenias of various [illegible]
-possible, but these were quite rare compared with the West-district. In
which we may add a small Scirpeae, quite frequent; and large [illegible]
-times growing in companies, as a Typha, more Candata
[illegible], but in general the [illegible] bit [illegible]
particularly abundant, with but it passed [illegible]

Vines are not rare, and besides H. Hypoxis
and some other [illegible] are [illegible]
Caryophyllaceae, abundant, and of [illegible] are rather limited.

4

[illegible]

[illegible]

[illegible]

[illegible] Australia [illegible] [illegible] [illegible]

Maritime Vegetation. — This was more than usually varied. Besides the Mangrove plant just mentioned, we have to enquire, on the mud flats at the head of the Auckland arm of Waitemata harbour, consisting of Avicennia and an Aegiceras, which was new to us in this station. Both were rather dwarfed and subarborescent, sometimes growing on all fours.

Of proper Salsola plants along the shore of the harbour we found the Salicornia . . . . . abundant; Sheffieldia, or a creeping Samolus, ... Selli-gonia. Triglochin, ... two species, like our European species; Juncus? . . . . ; — and from the Waimea district we received a Selliera, the Samolus repens, Australian species, Lagenifera Solandri, Arenaria rubra, Cotula coronopifolia, and a native Plantago. — On the beach at the mouth of the Waitemata, we found the spreading woolly grass (Spinifex) which is so often mentioned; Wingia, with a white fruit like Salsola; an Urvillea; Pittosporum crassifolium; Cakile Australis; Senecio lyratus; &c. &c. — and the Mesembryanthemums are perhaps prostrate, subarborescent together with a Pelargonium, ... and we are desired to add the Westringia, a large Veronica.

Prevailing Families. — in the districts we visited we arrange in the following order — 1. Myrtaceæ, which in bulk evidently exceed all others; — 2. Gramineæ, and we were for some time in doubt whether they should not take over the first rank; for they occupy the steppes much more generally than the Myrtaceæ, and perhaps the annual production of "vegetable matter" may not fall short in Amount; — 3. Leguminosæ; — 4. Compositæ, from their abundance towards the interior; 5. Rubiaceæ; — 6. Epacrideæ — which are but few families, as before observed, are chiefly in the vicinity of the coast.

The above are all that have any title to be ranked as prevailing, but we may yet mention some tribes, which are of frequent occurrence — as Coniferæ, Euphorbiaceæ, Rutaceæ, Goodeniaceæ, Cyperaceæ, ... ; Orchideæ perhaps should be first. . . . . The Ferns should hardly have a place here, for they are decidedly more rare than usual. —

Absent Families. — These on comparing lists proved to be more numerous than was anticipated. —

Magnoliaceæ

Magnoliaceæ.
Anonaceæ.
Nelumbiaceæ.
Capparideæ.
Papaveraceæ.
Fumariaceæ.
Cruciferæ.
Violariæ.
Polygaleæ.
Caryophylleæ.
Hypericineæ.
Malvaceæ.
Sterculiaceæ.
Tiliaceæ.
Linaceæ.
Geraniaceæ.
Oxalideæ.
Rutaceæ.
Meliaceæ.
Ilicineæ.
Celastrineæ.
Rhamneæ.
Sapindaceæ.
Anacardiaceæ.
Leguminosæ.
Rosaceæ.
Saxifragaceæ.
Crassulaceæ.
Droseraceæ.
Halorageæ.
Myrtaceæ.
Lythrariæ.
Melastomaceæ.
Onagrariæ.
Araliaceæ.
Umbelliferæ.
Cornaceæ.
Caprifoliaceæ.
Rubiaceæ.
Compositæ.
Goodeniaceæ.
Stylidieæ.
Campanulaceæ.
Epacrideæ.
Ericeæ.
Vacciniaceæ.
Diapensiaceæ.
Styracaceæ.
Myrsineæ.
Primulaceæ.
Plumbaginaceæ.
Ebenaceæ.
Sapoteæ.
Oleineæ.
Apocyneæ.
Asclepiadeæ.
Gentianeæ.
Polemoniaceæ.
Hydrophyllaceæ.
Boragineæ.
Convolvulaceæ.
Solaneæ.
Scrophularineæ.
Orobanchaceæ.
Gesneraceæ.
Acanthaceæ.
Myoporineæ.
Verbenaceæ.
Labiatæ.
Plantagineæ.
Nyctagineæ.
Chenopodiaceæ.
Amarantaceæ.
Proteaceæ.
Santalaceæ.
Thymelaceæ.
Elæagneæ.
Euphorbiaceæ.
Urticeæ.
Casuarineæ.
Myristiceæ.
Monimiaceæ.
Lauraceæ.
Polygoneæ.
Chloranthaceæ.
Aristolochiaceæ.
Piperaceæ.
Callitrichineæ.
Hydrocharideæ.
Orchideæ.
Irideæ.
Amaryllideæ.
Dioscoreæ.
Smilaceæ.
Liliaceæ.
Juncaceæ.
Restiaceæ.
Cyperaceæ.
Gramineæ.
Filices.
Lycopodiaceæ.
Equisetaceæ.
Marsileaceæ.
Ophioglossaceæ.
Characeæ.
Musci.
Hepaticæ.
Lichenes.
Algæ.
Fungi.

This too, does not include various well known Families, which in a smaller district would at least be

There are other Families which from their rarity, characterize the Flora almost as much as if entirely absent — such are the Valerianeæ, Urticeæ, Crassulaceæ, Rosaceæ, Gentianeæ, Boragineæ, Convolvulaceæ, Onagreæ, . . . Lycopodiaceæ; — Musci and Hepaticæ also seemed rare for a wooded Country; and the Fungi & Lichens, though present, did not often meet the eye.

The Myoporineæ were not met with to our knowledge, neither were the Frankeniaceæ; nor what was still more surprising, the Hamodoraceæ in their native state. — The true Pine-tribe also was not seen; nor the Iridineæ, though one is known to be abundant on N. New Holland. — Pomaderris was unexpectedly scarce, and also the Leucopetalum.

Cultivation & Introduced plants. — By the care and skill of the Cultivator a greater variety of products are brought to perfection, than would appear in their wild and denuded. Being present at the Horticultural

Exhibition, we had a good opportunity of observing their various Fruits in perfection & found it to be somewhat as

Grapes — and some better than the Grape; which we did not be disposed to find at a place & by the most unpolished ought to be produce of the Colony. Table grapes of various sorts were to be had at the Fruiterers. —

Peaches. — these are in order, and were abundant in the market and of good quality, — in their variety also.—

Nectarines. — The same may be said of these, which were considered by some to be even better than the Peach. —

Quinces. — These are plentiful, generally, at this season, & for use at home entirely without the Market; which was the reason we did not observe, that they were to be seen in the Fruiterers shops. —

Figs. — are common in Market, and pretty well; but the finest specimen of this fruit we did not see. —

Apples &c, were common.

Oranges — are here of excellent kind but not cheap.

Pine — are to be obtained here in tolerable perfection, & the kind is used as well as by the Natives as the Europeans.

Custard Apple — was quite common; but seemed dry & inferior to the Tropical fruit. Longan &c. we do not recollect — — — — — — but Shaddocks were brought forward at the Exhibition. —

Bananas — These are in market; — but Pineapples & other fruits in the vicinity of Sydney. — A little further north, as the Bananas as well as other Tropical fruits are said to do much better. —

Melons — we did not often see, and as far as we had occasion for judging, they did not appear to thrive; — both kinds of Water-melon are cultivated. —

Pine-apples, — were at the Exhibition . . . . . &c.

Chestnuts and Walnuts. —

Plumbs — were common in Market; but the varieties met with were not the most esteemed. —

Quinces

Quercus - [illegible]

Vegetable [illegible] object [illegible] - Hog are also in your [illegible].

Solanaceae - [illegible] be [illegible] the Indies. —

Cucurbitaceae

Cucumis. —

Lagenaria

Cephalandra (Coccinia) [illegible]

Cucurbita. [illegible] Cucurbita [illegible]

Compositae.

Helianthus

Bidens

Tagetes [illegible]

Senecio [illegible]

Bidens [illegible]

Zea

Phaseolus

Gossypium

Oxalis

Solanaceae [illegible] a large [illegible], I never observed them cultivated. — Dr. Schleiden (Contributions to the Botany of Jamaica), does not remember to have seen.

Yam. The principal kinds cultivated are [illegible] and the latter is found to succeed much better than [illegible] for it.

Uncultivated Plants. The flowers [illegible] are [illegible] credit to any part of the world in this respect, and [illegible] and [illegible] equal to those of [illegible].

S. E. Australia.

The Dicksonia antarctica of New Zealand, flourishing in great abundance —

— The Botanic Garden and Miller Bay grounds appear very

things to interest us. — Other plants of the same kind — but the Dicksonia antarctica excelsa, claims the first rank; its top was now being seen

above the leaves. — We attempted to obtain the C. first take, but we

but we did not do it any where in a very flourishing state.

We were a good deal surprised to find the country

- tirely overrun with European Weeds, as we were told; — though there

seemed here nothing in the shrubs and trees to make us fear them, but a

small part of these appear in the following list, yet we did not notice them

- sufficiently! — We were told there would soon be none left to obtain as

not so much at variance with all — and indeed Mr. Backhouse, in

in "Van Diemen's Land" plants in general Hobart Town and in the

open air in England".

Catalogue of Plants collected in S. Australia.

Ranunculus	
Clematis	
Wahlenbergia	
" denticulata	
Drosera	
Aotus	
Pultenaea	
Daviesia	
Gompholobium	
Bossiaea	
Hovea	
Kennedya	
Oxylobium	
Mirbelia	
Viminaria denudata?	
Eutaxia	
Acacia	
Pimelea	
Correa	
Leptospermum	
Melaleuca	
Eucalyptus	
Epilobium	
Myriophyllum	
Callitriche	
Haloragis	
Hydrocotyle	
Apium	
Daucus	
Lagenophora	
Helichrysum	
Gnaphalium	
Senecio	
Calotis	
Podolepis	
Craspedia	
Cassinia	
Olearia	
Brachycome	
Vittadinia	
Solenogyne	
Centipeda	
Cotula	
Leptorhynchus	
Gnephosis	
Ixiolaena	
Podotheca	
Calocephalus	
Helipterum	
Rhodanthe	
Ammobium	
Helichrysum	
Gnaphalium	
Stuartina	
Lagenophora

St. E. Australia.

Cionia? . . . . . f. hirsut. hood; - flow.
Brocchia . . . . . stipitate, [illegible]

Bursaria . . . . . [illegible]
Pultenaea? . . . . . 6 st.; fol. like Genista; pods smooth. - flowers [illegible]
. . . . . fls. compact pisum - 6-7. juga; fol. very small, setaceous; [illegible]

Dillwynia . . . . . [illegible]

Eutaxia microphylla . . . . . [illegible]
. . . . . parviflora? . . . . 2in. 4-4 juga; small [illegible]

Hovea

Platylobium . . . . . [illegible]
. . . . . ? . . . . [illegible]

Gompholobium . . . . . [illegible]

Bossiaea . . . . . [illegible]

Pultenaea . . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
3 to 4 inch; branch. at base; fol. 3 rows; calic: flowers [illegible]

Kennedya . . . . . [illegible]
. . . . . [illegible]
. . . . . rubicunda . . . Sydney & Illawarra.

Phyllotus? . . . . . long lin. lanc. leaves; - joint flow. - Illawarra; S. -
Indigofera . . . . . herbac. 6 ft.; branching; pubes; - shores of Hunter near Newcastle. perhaps introd?
Cassia . . . . . tall, branches; large yell. flow. - Parramatta. -

Cassioid? . . . . . but-shaw-installed [illegible]; foliol linear; [illegible]
. . . . . [illegible]

Cassioid . . . . . fol. pinn; foliol linear, lanceol; stipulate; long compressed pod; - 6 ft. Parramatta; Illawarra

Acacia . . . . . [illegible]
. . . . . hispidissima; capitat in term panicles; - large shrub [illegible]
. . . . . fol. lin. 1 inch. 2 ft. - Parramatta.
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
. . . . . juniperina . . . . Sydney - B.
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]

N. E. Australia.

1

Middlesex . . . [illegible]

Mystics . . . [illegible]

[illegible] . . . [illegible]

[illegible] . . . [illegible]

Scyte, rosaceum . . . from Crocoid leaved; — Scydon
[illegible]
Viola . . . [illegible]
L. lutea, acuta, 2 ovata, fimbriata — Hyd
[illegible]
Hor. in loco dumoso; cal. ovando... subtus — tot. c
ovato Hor. tenuit v. Crocoes; Hydonus, S. — of a
Opuscula; but fol. still smaller; c
ovate leaved; Sudonus, B. —
[illegible]
lutea. Crowded leaved; obtuse Cord. — Hird
[illegible]

Brockets . . . . lucy-star; fol. short: ovate: Sudonus v.
fol. short lanc. ½ to 1 in; — Bonnie b.
[illegible]

Mystics . . . [illegible]
small low; 2 fl; fol. oblong, acute at each end. [illegible]

Nonny cuticle flos, lilia (vocabit; fol. ovate a
broad, 3 — ribbed leaves — Sieve knots

Sic . . . . doubtless introduced; but now frequent in wild [illegible]

[illegible] . . . [illegible]
[illegible]

Fairies . . . [illegible]
[illegible]
Cor. 2-lobed, pl. lanc.; Sud

Adelia . . . .

Villarsia . . . .

Nymphoides . . . .

Menyanthes . . . .

Damasonium . . . .

Sagittaria . . . .

Alisma . . . .

Hydrocleis . . . .

Limnocharis . . . .

Butomopsis . . . .

N. E. Australia.

S. E. Australia.

Tab. Illustrata.

Fig. 1. [illegible]

Fig. 2. [illegible]

Fig. 3. [illegible]

Fig. 4. [illegible]

Fig. 5. [illegible]

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Fig. 900. [illegible]

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Fig. 911. [illegible]

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Fig. 989. [illegible]

Fig. 990. [illegible]

Fig. 991. [illegible]

Fig. 992. [illegible]

Fig. 993. [illegible]

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Fig. 995. [illegible]

Fig. 996. [illegible]

Fig. 997. [illegible]

Fig. 998. [illegible]

Fig. 999. [illegible]

Fig. 1000. [illegible]

Ulmaceæ

Ulmus ... Fagaceæ; Ulmaceæ; Cel. Spaceæ; Coryl. O?; Ulmaceæ; Ulmus ... Ulmaceæ; Ulmaceæ; Ulmaceæ;

S. E. Australia.

Xanthium strumarium . . . . . ; Xyloxanthum ; Xanthium . . . . . ; Xyloxanthum ; Xanthium . . . . . ; Xyloxanthum ; Xanth

[illegible] Quadratia.

S. E. Australia.

S. E. Australia.

Acrotriches divaricata . . . . . large light bright . . . . . .

. . . . . & *hirsuta* . . . . . pyramidic spicate . . . . . .

. . . . . ? . . . . . tinged . . . . . .

Cryptandra . . . .

[illegible] . . . . . "tree; stem of a conspicuous of stem" . . . . . .

. . . . . .

Thrixspermum . . . . . .

. . . . . .

Marchantia . . . . . .

S. E. Australia.

Mimosa . . . . . *taxa ad Port Phillip. — v. ulter Mimosa.*

Acacia . . . . . *Mimosa, Mich.*

Cassia . . . . . *Sydney, R. —*

Ugonium . . . . *Syd. — Vide Linn.*

Hydrophytes.

[illegible]

The Monilia [illegible]

Collections.

Sargassum [illegible]

Vine [illegible]

Scaberia [illegible]

Fucoid [illegible]

E. Australia

Dicaeum : . . . of Vigors "Trans. Linn. Soc. vol. xv. p. 191, 1827"

Pardalotus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Melipotes : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Meliphaga : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Myzomela : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Entomyza : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Philemon : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Tropidorhynchus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Anthochaera : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Acanthochaera : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Ptilotis : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Cissomela : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Acanthorhynchus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Anthornis : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Certhiparus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Zosterops : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Pachycephala : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Colluricincla : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Oreoica : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Eopsaltria : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Petroica : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Orthonyx : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Psophodes : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Cinclosoma : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Pomatorhinus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Pomatostomus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Malurus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Sphenura : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Acanthiza : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Hylacola : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Sericornis : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Origma : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Megalurus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Cisticola : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Poliornis : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Hirundo : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Cheramoeca : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Petrochelidon : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Artamus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Grallina : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Strepera : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Gymnorhina : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Struthidea : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Corvus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Corcorax : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Monarcha : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Myiagra : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Rhipidura : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Seisura : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Dicrurus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Coracina : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Graucalus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Campephaga : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Oriolus : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Sphecotheres : . . . Vigors & Horsfield "Trans. Linn. Soc. vol. xv. p. 264, 1827";

Mammalogy.

If we cast our eye on a map of the Indian Archipelago we shall perceive a remarkable break; separating those Islands which were most extensively connected with Australia, from the rest of those Islands. That the cause of this, must be the comparatively recent formation of that line of the Sea-shore, — and in no Class of the Animal Creation is this more strikingly evidenced than in the Quadrupeds. Of these we have but little of the most local character, but that little is sufficient to show that the Coast is the earliest portion of the land that is formed. The Dog, with the Genus of the Rat, the Opossum, the Ornithorhynchus, the Cat tribe, &c. &c. are all more or less confined to the Coast, scarcely any of the Quadrupeds reached the more modern Islands. — The same Genus of Animals is rare, whether on the Continent of the Philippines or Borneo Java, or even Timor. —

Australia has indeed its Native Dog, and many Rodentia, the remarkable and peculiar Monotremata (which we must bear in mind have, possibly the Marsupial Genus); but beyond these we see no traces, though it is not to be inferred

and

and varied, in Quadrupeds, than Passages. ... This is a bad general assemblage of animals, which it is difficult to explain as a group, at the same time, the difficulty can be overcome by a little management. My view to represent would be the Marsupials of Australia, with a few others to their Northward; and represent them in one, rather in three Museums, and not with regard to the national Fauna. Thus, the Kangaroo may represent the Deer, or the Antelopes of Asia and Africa; Phascolarctos, the Bear; ; the Petaurus, the Flying Squirrels; the Chironectes, the Pygmy ants of the East Indies; the Myrmecobius the large heads of prey, as the Glyphis, the Dasyurus, the Wombat the Thylacinus. ; the Koala, the Lion & Tiger. ; the Phalangista the Common Opossum, & perhaps the Genus the Hypsiprimnus. ; also the Echidna may stand for the Hedgehog; and perhaps a small part of, the Rat & Mouse, & the Ornithorhynchus (Platypus) will represent the Otter & Seal tribe. There is yet much that must be done in the Zoological Museums.

In selecting the Animals & Birds of the Australian fauna for exhibition in the British Museum, I would recommend the Skulls, and the Skeletons of the Quadrupeds, as well as the Skins, and the Birds, as well as the Skins, should be exhibited in the Museum, & the other parts of the Skeleton & Skin may be kept in the Museum. The Skeletons are given as the most proper for the purposes of the Museum & Students.

In the Museum, viz. the Skeletons & Skins of the Animals & Birds as peculiar to Tasmania; according to Mitchell &c. The Third, the Native Dog, ... does not find the inland Mitchell — He is a bad runner. He could run down Opossums, and — as he could have, with his assistance. The great deficiency in the Museum is kept in the Australian Skeletons, in Natural Skulls, & Skeletons with regard to the Natives, &c.

At any rate I would suggest that during the visit of Captain Sturt in Australia he will not with a single Native Australian, or Native Tasmanian, however rare with a view regarding them, visit the British Museum, & any credit to the Institution, and particular attention paid to them will be a most favourable.

"Pteropus Edwardsii . . Moulton Bay." (Sydney museum). - Differed from the
Large species. Shared "flying-foxes" confirmed of by a resident of Macquarie's site.

"Rhinolophus megaphyllus, Gray. - Moira Station, Milbi" (S. Lucas)

Pteropus . . . Mt. Arthur Bay." a little Communal. I was not supposed by the
settlers, on account of the Natives. It was much complained of in the Upper Hunter, as
destroyed the Crops. I saw an individual subsequently at Mt. de Grimes in New Zealand.
It was kept at work, yet appeared to be fed with difficulty. The Natives must eat it,
yet could not tell, he said, how fat or lean, as it is the rule. It would be a thousand
years before it is exterminated. Mr. Lucas M.H. The feet and wide were white and
hairy; with [illegible] by the Natives.

Otaria . . . N. "Black Seal." - Small Black with a fine gray hair. Coast near
Macquarie . . . In the spring appeared to me in numbers. The females of the
Colony - I did not see it on the Coast. The young I procured with the Natives, having
been taken by them in the Bay at the Heads. Mr. Lucas saw Mr. Gould's
on the Hunter, and the Bull four feet long; a native pitch on the Beach of the sea; but it
was the Otaria gillespiei of Gray, not mentioned. - In the spring from
different localities are obtained in the Sydney museum. - Mitchell speaks of the Hunter as
having a more valuable Seal; Eschrichtius -

Hyperoodon . . . "Bottle Nose" - of Hunter

Rhaseoleucos . . . The Beaked - Rarely caught the Bow or Head; from the
Hunter." (S. Lucas - It was rarely caught at the Heads, and Bowery on Shore.

Rhaseolomys . . . . Mr. Gould's for the Island; I saw (Mr. Lucas) - also on Lizard
Island reported.

Perameles . . . . Noted for being out of season. Mr. Lucas & Mr. Gilbert
Specimens at one Inspection Museum. Mr. Lucas (in retrospection) found at
Lizard on Hunter" it is called in the general Australian -

Chaeropus . . . . . one of the most singular Marsupials of late
years. Mr. first were made those of a Communal Animal, known as the Bilby of the Tribe. -
and its resemblance to the pigmy bandicoot is also quite close and by Mr. Gould of the
Zoo.

1st. [illegible] Fur [illegible] Hind feet appear to [illegible] Tail [illegible] [illegible] [illegible]

S. E. Australia.

"Type (?) specimens, Mitch." — The first Zoological Museum of Europe, and a genuine Mus. Brit. Museum Mus. Brit. Museum Mus. Brit. Museum Mus. Brit. Museum Mus. Brit. Museum also in the S. E. Australia. — The Zoology by Mitchell, who adds that it has been examined and which is proof against the Australian dog.

"Mus (?) Mitch., Mitch." — Mitchell's specimen, a true Mus, probably Mus; which however is now extinct. The last is Australia in the genus Mus, a genus of mice with the genus Australian Mitch. — (Mus Mitch.; Mus. Mitch.)

"Echidna . . . . "Mountain ranges." (Mitchell.)

Ornithorynchus . . . . One species only in the S. E. Australia. — Mitchell's specimens from Mt. Scott of Gloucester were either females which had not begun to reproduce, or young individuals; — but the question about which he could have no doubt must be regarded as still undecided. —

Birds

Australia is famous for the number and variety of its birds, and even for the brilliancy of their plumage; — as shown particularly in the Great Bird, which prevails more than Mus in any other part of the World. The general character of Australian birds appears to be distinguished for — variety of form

the diversities of which, and a diversity of plumage, which exists in each of them — which I could hardly give myself from the impression that the whole country was one vast garden of Mus Australis and Mus Australis.

The most striking peculiarity of Australian Ornithology is with the Mus Australis of the Australian Aborigines; and notwithstanding the absolute poverty of Mus Australis, the geographical distribution of Mus Australis is hardly less limited than with Mus Australis. Other Australian genera of Mus Australis are found in Australia, but beyond that, Mus Australis Mus Australis with Mus Australis, Mus Australis or Mus Australis. — Of the Mus Australis Mus Australis found, of course, not migrate from South to South. Many of the species however appear to dwell in particular districts, from which they may issue on any particular emergency, or towards the first approach of winter or unfavourable weather. Thus Mitchell was informed that "several birds had made their appearance about his residence this season, which as

to

[illegible]

The Parrots have already been mentioned as the prevailing tribe. We found them in most all the localities we visited on the Upper Murray especially in the mountains of the [illegible] and Australian Alps. They appear single or in the type of the Ashby Cove and the Gippsland [illegible] and were also found in that of the Western Port [illegible] group.

[illegible] Thrushes, were in range of interest next to the Parrots in point of the number of species. We have to add a few species to those mentioned in that family. Three are the fruit-eaters; and we have here a rare chance to study the habits of the Australian Thrushes. — The Magpie Robins [illegible] with a slight environment type of structure to the three genera we divide the family into. — Then as a rule to [illegible] the most birds in order of frequency — [illegible] may be, though at a long interval, the Coraciidae, or else the Shrike-tribe. The Hawk tribes are however abundant. The Melliphagidae may come next, — and it seems there is also [illegible] a variety in the Upper Lake Country to that on the Coast Mountains. — The [illegible] many small birds of various genera, as it [illegible] to [illegible] belong in the type in general as we would call it. In the Rainforests of the coast belt & the [illegible] of Mt. Gambier; and we may mention [illegible] the peculiar [illegible] the birds are accessory of the Australian birds in general. Through [illegible] the Continent. —

Among the negative characters of the Australian avifauna [illegible] the most remarkable is the absence of Woodpeckers. — The absence of Ostriches has been long remarked; an

indeed we were used to see most [illegible] of the larger species) met the
Vicinity of [illegible] — 3 species of Parra (Jacanas) a Tree — Grus
Leach (Abundant although [illegible] in Hunter; and we may [illegible] that they
are properly birds of open [illegible] — Of the Order Insessores in Hunter we find here
Edolius, none of the Sturnidæ or Paradiseæ, no true Keller, Upupa, Garrulus, Troglodytes.
Parus true. . . . . The Finches appeared to me unusually rare [illegible]
of the Insessorial Carnivora; the true [illegible] birds are [illegible]
occurrence and we find rather a preponderance of the genus [illegible]
Hunter & Malayan Countries.

"Aquila fucosa". . . . [illegible] Bridge Island Cape; one was [illegible] in
my up the Hunter. — (also Sydney Museum.) — Appears to be the only species. —

"Haliaetus leucogaster." — A fine species, corresponding to our White-bellied Sea
Eagle (H. [illegible]). [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible]

[illegible] 2 species are confined to N. E. America, & about equal in [illegible] & distinguished by pale eyes.

"Vireonica Virgata." (Vieill.) Regarded as a N. Hyp. Bird, small [illegible] small Companies, rarely on the ground as in [illegible]; resembles other [illegible] flight almost a Compressa while at rest under the wings. — 2 [illegible]; a 2d species in the S. Inds. — This genus of Gnatbl seems [illegible] to the [illegible] Vireonica Olivacea (Vieill.) Found [illegible] to the Columbia. Its appearance is that of a Vireo, but rather smaller, & more slender and active. Under the wood of trees & bushes, it runs [illegible] Companies and will permit a very near approach before it moves — & "make off by hopping rapidly. Its song [illegible] and indeed its voice [illegible] to that of the Vireonica, but too loud & "brow-like," for my taste. [illegible] 2 species [illegible] N. E. & one found in the S. Inds.

"Dacnis" [illegible] 2 species in S. Inds. — [illegible]

"Progne subpurpurea, Vieill. (S. Inds.)

"Cyanotis cyanea [illegible] (S. Inds.) [illegible]

Cypselus [illegible] Small Companies were often seen on our way; alighting on the [illegible] rate, and their flight with swift motion long Continued — [illegible] soaring at a slight elevation, somewhat after the manner of our purple Martin — at times reminded me sometimes of leaves, borne by the wind. — 4 species [illegible]

"Ramphastos [illegible] Vieill. Ramphastos" (S. Inds.)

"Rhamphastos [illegible] 4 species in S. Inds. "S. Inds."

"Sphecotheres viridis .... Grauculus of Buffon" — (S. Inds.)

"Galbula [illegible] Warblers of others" — (S. Inds.)

"Otomitrica [illegible] Vieill. [illegible] Nearest [illegible]

"Callopsis [illegible] — (S. Inds.) Febricosa. Seemed too strong for genus.

Falconculus ..... bill very short. "Its manners [illegible] the Shrikes" according to Mr. Cogan. — 2 species in the S. Inds.

"Fulicinculus" . . . . . Black-cricked Stilt" (S. Mus.) – Not Cong. . . . of the bill not webbed. –

[illegible] . . . . . [illegible] . . . .

"[illegible]" . . . . .

"Rhipidura" . . . . . (1 spec. in Lond. Mus. bill [illegible]

"Monarcha" . . . . . (3 species in S. Mus.) Hycadchon.

"[illegible]" . . . . . [illegible] north and East Aust. Coast, [illegible]

"[illegible]" . . . . . [illegible]

"Turdus" . . . . . 2 species. (S. Mus.) – The notes of a bird one heard on the lower Murray very much like those of our Mocking Bird.

"Grallina" . . . . . 2 spec. (S. Mus.)

Cinclosoma punctata . . . . . (S. Mus.)

"[illegible]" . . . . . "[illegible]", on opp. Coast of

"[illegible]" . . . . . [illegible]

Anthus rufescens Gml. 3 or 2 sp. (in S. Mus.)

"Megalurus cruralis" (S. Mus.) – an Insectivorous?, but longer stout legs. – Terrestrial

"Maxicola pectoralis (Gml. – Id. Mus.) Aust. perched bill longer wings than [illegible]

"Saxicola stictoptera" . . . . . Male not seen [illegible]

"[illegible]" . . . . . [illegible]

"Myiagra" . . . . . Throughout Australia [illegible] Brown Head, tail [illegible] [illegible]

"Vermivora" . . . . . Apparently congeneric with our [illegible] [illegible] [illegible] [illegible] by Mr. Gray.

[illegible]

[illegible] [illegible] [illegible] [

S. E. Australia.

"Sitta" leucoptera . . . (5 species)

"Sittella" . . . . . 2 species [illegible]

"Pachycephala" . . . . 2 species [illegible]

"Colluricincla" harmonica Gm. — [illegible]

"Rhipidura" . . . "Australia the [illegible]" [illegible]. The [illegible] [illegible] [illegible]

[illegible]

"Kakatoëinus" . . . . . 2 sp. – (S. Aus.)

"Nasica sulcirostris" (S. A.)

Dacelo . . . . . 4 species much like the Jamaican, [illegible] the upper Mandible. – [illegible]

"Dacelo gigantea" . . . . Possibly may [illegible] Jackass." – [illegible] and also [illegible] vociferously [illegible] Jackass [illegible] compared [illegible] Bird [illegible] yet it seems most formed for something besides "catching insects and carrion beetles, if indeed [illegible]

"Halcyon" . . . . [illegible]

"Ceyx [illegible] (S. Aus.)

"Todiramphus" . . . . [illegible]

"Todiramphus Chloris" . . Mangrove Bay." – (S. Aus.) – [illegible]

"Nycteloptes" . . . . The Common Cockatoo; a flock [illegible] difficult to approach them. – [illegible]

"Nycteloptes niger, Lil." [illegible] Cockatoo, [illegible]

"Cacatua tricuspis" . . . . 4 species, (S. Aus.) – The Black Cockatoos. – 4 species met with [illegible]

"Calyptorhynchus melanura" – (S. Aus.) – 2 sp. Darwin, [illegible] (S. Aus.)

"Vulpecercus eximius, Hk. f. Hb. Kew. [illegible]

[illegible] Sikkim [illegible]

"Navicula" [illegible]

"Pinnularia" [illegible]

"Synedra" [illegible]

Gelasinospora [illegible]

[illegible]

"Sphaerella" [illegible]

"Sphaeria" Balthorst [illegible]

[illegible]

"Stigmatea" [illegible]

"Mycosphaerella" [illegible]

"Sphaerella" [illegible]

"Sphaeria" [

"Mesoleptes gracilis ( )

"Spec. . . . . ♀ Head and antennæ fuscous; thorax
black . . . . . metathorax black; abdomen
metallic. — Head fuscous; face . . . . . ; antennæ
dusky; scape . . . . . ; thorax . . . . . ; abdomen
. . . . . ; legs . . . . . ; wings . . . . . ;
stigma . . . . . ; nervures . . . . . ;
length . . . . . ; expanse . . . . . ;
Hab. . . . . ; Sept. . . . . ( )

Mycteicoxus Novæ-Caledoniæ" . . . ( )

"Mycteia metallica" . . . . . ( )

"Tabuli" . . . . . 2 specs. ( )

"Hoc genus . . . . . ; thorax . . . ; abdomen . . . .

"Rattus" . . . . . 2 specs. ( )

"Pachyprora mirabilis" . . . . . ( )

Podiceps . . . . . 3 specs. Head, neck . . . ; thorax . . . ;
abdomen . . . ; wings . . . ; legs . . . ; tail . . . ; bill . . . ; iris . . . ;
throat . . . ; cere . . . ; length . . . ; expanse . . . ; tarsus . . . ; middle toe . . . ;
nail . . . ; hind toe . . . ; nail . . . ; Sept. . . . ; Hab. . . . ; Oviparous.

"Procellaria leucopsis . . . . . ( )

"Procellaria gigantea" . . . . . ( )

Puffinus . . . . . Black. — Sides of the mouths & the throat. — ♀ . . . . . ;
small, bluish grey; some black mixed, (S. Ocean)

Thalassidroma . . . . . ; probably new; belly whitish, rump grey; tail black, (S. Seas)
but one tail, grey. —

Pachyptila (?) . . . . . ; bill did not see the lamellæ of the . . . ; head
& neck grey; bill very broad and small notch; ♂ not seen; ♀ grey.

"Diomedea fuliginosa . . . . . ( )

Larus . . . . . 2 specs. Head & neck, white; tail & back, pale grey;
wings & tail — 2 specs. have white bars on wings & tail . . . .

"Larus (?) Gouldi" . . . . . ( )

S. E. Australia.

Sterna . . . (Hunter) "La Perouse" Wall. A white [illegible] species is at the mouth of Hunter. — 2. S. argentia Vieil. Illawara, [illegible] mata. — 3. S. Arctica, Port Jackson. [illegible] 4. S. Pelicanoides, Gray. — Moreton Bay" (S. Mus.) - Belongs also to Polynesian islands. The same too apparently, seen with the Gull

"Pelicanus australis .... Moreton bay". (S. Mus). Nov. is probably the large [illegible] Rivers &c. as the Lower Hunter.

"Corbo cristatus, Vieill. - Moreton bay" - (S. Mus) - Largest, white crested Pelican. S. [illegible] "Moreton bay" [illegible]

"Plotus . . . . . Moreton bay" (S. Mus.

Cygnus ol. . . S. A. Swan [illegible] Hunter, [illegible] flying high, as I got [illegible]

Platycercus . . North. W. Australia [illegible]

Anas . . . . (Hunter) Size of Common Duck. [illegible] black margin each side; [illegible] head dark. 2. Anas . . . . . ; little larger than a Teal [illegible] with some green feathers; [illegible] each side. South of the Hunter, with freckles. —

Reptiles.

The Lizard [illegible] with the [illegible] all I can report the same [illegible] forms are known to exist [illegible] Hunter we should [illegible] the Polynesian Islands &c. [illegible] - common, except [illegible] and broader, — Except [illegible]

It is somewhat remarkable that we should not have met with the Gecko Viti, Mac. Ill. tho' it has been found at Cape York, Moreton Bay, Illawarra, Port Macquarie, Ill. bivittatus, Gray.

"Clelia insbricata Kuhl. Java"; also at Timor (Stokes) — The specimen small, but it seemed to me Ill. [illegible] from the Fiji Species?

Platemys Macquarii? .... Small; the neck not retractile but bent [illegible] and out of reach of the [illegible]

Varanus varius .... This large Reptile (3 to 6 feet in length) appeared to be more rare, than it [illegible] of the Colonists, [illegible] often, rather [illegible] most branches; whence it fixed itself without regarding any further attempts to dislodge it — and indeed from the height & scarcity of suitable [illegible], it was more secure than would appear at first. — This we were informed is the usual [illegible] but [illegible] of the first order.

Agama .... Size of A. undulata of N. Am. — About [illegible] at Wilson's [illegible]

Physturus ... Taken by Mr. Wade about rocks in the Volcanic [illegible] — Also at Bremer [illegible]

Iguana .... Like Physturus, but tail nearly cylindrical, finely — Obtained in Mr. Wade's [illegible]

Scincus .... Medium size, limited. Handsome species. — Found at Penrith Brown

Scincus ( ) .... Large species. One brought to [illegible] appeared to be [illegible] of the ground. A black [illegible] animal [illegible] quick in its motions. [illegible] to Mr. Gray, as a true congener of the preceding.

Viper .... Was not seen by us, but [illegible] to have been found at Emu Plains & [illegible] with the [illegible] Gallinacea!

Coluber .... [illegible] of over 4 feet. [illegible] Body & tail light brown & irregular black, with a light spot in the middle. Upper Hunter; found under the bark of a tree by Mr. Dana. —

N. S. Australia.

Coluber . . . . Very slender. — Sydney

Natrix . . . .

Viperid . . . . Large. Small round [illegible]

Found in [illegible]

Amphibia.

These Animals were also in some variety. — Of the Natrix most [illegible]

Hyla . . . . Large, green. — Often met with, but only seen in the [illegible]

This species, whose concerts were sometimes heard in the immediate [illegible]

Hyla . . . . Head [illegible]

Hyla . . . . Small. — White line from eye along flank.

Bombinator

Rana? . . . . Congener of our R. esculenta; — body [illegible]

[illegible] . . . . Round-grey. — small, spotted. — [illegible]

Pisces.

[illegible] from the Eastern waters of Australia. We have none identical [illegible] Cape Otway; or even at Patrick's Plains, where we found [illegible] at N. Jervis Bay, we found only Salt-water fish (as Mugil) [illegible] to be generally [illegible] the Eastern rivers, [illegible] the Australian rivers, except in time of flood. — At Drayton however found — Eel in the fresh waters of Illawarra. —

Most of the fishes [illegible] Natural Order [illegible] Species [illegible] Genus [illegible] Species [illegible] Genus [illegible] Species [illegible] Genus

A. C. Crustacea

Pterygotidæ . . . . .

Scorpionidæ . . . . .

Olistheus . . . . .

Scia . . . . .

Cremidens? . . . . .

Eurypterina? . . . . .

Hamus? . . . . .

Pagelhus? . . . . .

Chætocles . . . . .

Lepidoderis . . . . .

Acombrid? . . . . .

Carcina . . . . .

Curcina . . . . .

"Stromatens" . . . . .

N. & Australia

Dejanus . . . . . Much like *Danaus*. — Brought by post. —

Virgil . . . . . [illegible] of water; [illegible]

Athenais . . . . Small species. [illegible]

Plebeius . . . Apparently same as New Zealand. — 5 inch.; [illegible] apparently D. vagans; [illegible] by Mr. Fryer. —

Cytheris . . . . [illegible]

Electris . . . . . Appendages to vent; very large scales. [illegible]

Scabrid . . . . . [illegible] deep; spots on disk; [illegible] faintly interrupted; pointed teeth; forewing. not crenulate. — Brought by fish.

Subnivid . . . . . Apparently D. speciosa. —

Nubrid . . . . . Apparently N. —

Bolonia . . . . . broad, depressed. —

Hemiaraxetes . . . . . "Guard-fish" Sydney. Same also at the head of fish — Hunter, [illegible] not [illegible] for [illegible] purpose the long [illegible] to [illegible] inserted [illegible] — passing beneath it [illegible] which covers it [illegible] entirely and without the [illegible] covered by [illegible] entering [illegible] The operation is [illegible] of the Rhynchotus or Scissor [illegible] in fact skims the surface from below, as the bird, from above. —

S. E. Australia.

Sole? . . . . . a "Sole" was spoken of in Illawarra Lake but not procured.

Diodon? . . . . . "Porcupine fish" said to be in Illawarra Lake – two specimens [illegible]

Tetrodon . . . . . Tetrodon Lake a pale green; at present; may become [illegible]

Balistes? . . . . Balistes; a sort of "Jenny," not unlike [illegible]; upper dorsal spine barbed like Silurus. Found near Mts in Illawarra Lake; Eastern Creek [illegible]

Mullets? . . . . 10 inches; taken in seine by Mr. Dapes. –

Mullets? . . . . Usually 9; 8½ inches; lateral spine [illegible]

Stingaree? . . . . "Sting-ray," said to be in Illawarra Lake; but not seen. –

Sharks . . . . Large Sharks [illegible]

[illegible] in Illawarra Lake," & procured from them the following List – viz. – "Mullet [Mugil], Bream [Sagrus?], Blackfish [. . . . .], Trumpeter ["like Bream" [illegible] "do, but pale" & very small] of Sagrus, ... ; Whiting [Sillago?], Lizard-fish [Synodus]; Flat-head [Platycephalus? . . . . .], Sole [Solea?], Toad-fish [Tetrodon], Porcupine-fish [Diodon], Leather-jacket [Balistidae], Sting-ray [Stingaree]

Insects.

Australia [illegible] insects, unlike Illustrations the Opinion of some at a distance — and the contrast was frequently striking, in coming from N. Pt. [illegible] Islands. Large Showy insects are not with much [illegible]; but we are accustomed

[illegible]

Obs. (Apparently [illegible]

The present list is too imperfect to afford any further information respecting the prevalence of, or the absence of certain forms. — We have no [illegible]

[illegible]

Scirpus [illegible]

S. [illegible]

Cyperus [illegible]

Cyperus . . . . . 2 Height from one [illegible]

Cyperus [illegible]

Cyperus . . . . . [illegible]

Hypoxis [illegible]

Hypoxis . . . . . [illegible]

Hypoxis [illegible]

Hypoxis . . . . . [illegible]

Hypoxis [illegible]

Hypoxis

Abend . . . . .

ige . . . . .

Angelo? . . . . .

Seeseid . . . . .

Waldeplatz? . . . . .

Hilt. Hof . . . . .

Lebe . . . . .

Wegbezeichn . . . . .

Kampfbahn . . . . .

Vorsaal . . . . .

Blapsteil? . . . . .

Helops? . . . . .

Cistela? . . . . .

Lagria? . . . . .

S. C. Australia.

Cedarwood . . . . . wood pale brown, light & close grained, strong
. . . . . 2 sp; Swan R.; Black Boy near Perth, Dist. Sykes

. . . . . but hard; Tilli Downs; Barclay. Sykes

Sytta . . . . . Hunter.

Casuarina . . . . . pale; Common. Sykes
. . . . . 2 sp. Interior. A

Gum . . . . . 1 sp. but. Sykes.
. . . . . 2 sp. Swan R. do.
. . . . . Gum tree. Hunter.

Calandra? . . . . . small; light pale brown. Sykes.

Gum . . . . . very light & brittle.

Gum . . . . . small Wood.

Xylopia [illegible] . . . . . (Wild fig 2) Interior. Hunter.
. . . . . Gum. Light. Hunter.
. . . . . very fine grain. do.
. . . . . Sweet. do.
. . . . . Small. do.

Acacia? . . . . . Sykes.
. . . . . 2 sp. Swan; pale spots. Sykes.

Superda . . . . . Large; Hunter

Cassia . . . . . Like wild Fig; Sykes.
. . . . . "rather large" Hunter
. . . . . Fig. Large. do.

V. C. Australien.

Podagrion . . . . . head yellowish-brown; thorax above . . . pale yellow;

Perilampus . . . . . antennæ pale yellow; head and thorax . . . black;

Schizaspis . . . . . tibiæ and tarsi white, abdomen yellowish-brown.

Eupelmus . . . . . all pale yellow; head and thorax . . . black.

Eurytoma . . . . . antennæ brown; head, thorax, scutellum yellowish, abdomen orange-yellow; pedicel and ovipositor . . .

. . . . . ? . . . . black, coxæ and tibiæ yellow; abdomen . . .

Odontomerus? . . . . . antennæ and thorax black; abdomen yellow.

Eurytoma . . . . . antennæ, head, thorax and abdomen . . . black; legs . . . yellow; coxæ . . . black.

Formicida . . . . . small; black.

Polistes . . . . . orange-yellow; wings . . . yellowish.

Scolia . . . . . dark blue; wings . . . yellowish.

Page [illegible]

Annabasis.

[illegible] done by Mr Coulter [illegible]
[illegible]
[illegible]

Mollusca.

The Terrestrial species were decidedly rare — it is true indeed they were . I could scarcely go . then nothing to get at it would pour - and the rocks in [illegible] species were . . . Helix, Bulimus,

The Fluviatile species were more numerous than could have been expected; still we obtained only the ordinary forms — viz. Unio, Alathyria, Physa, Planorbis, &c.

For the Marine species I must refer to Mt Gambier — at the same time I remember that from the state of the health, and consequent hurried visit we were not able to collect much. — We got what was obtained by myself — that is no notes at the time, and it has now escaped my memory. I did not however meet with any remarkable species.

Calliopus . . . . Lucina; - Cytherea, Mactra, Donax. —

Conchothaumatia . . . was written last of Mytilus (Gambier) - some perforating Pholas was found.

St. Andrea.

Limax . . . . . Pinnatella, Cuv. sp.

Helix . . . . . [illegible]
. . . . . [illegible]
. . . . . [illegible]

Nerita . . . . . [illegible]

S. E. Australia.

S. E. Australia.

Wyatt . . . . Upper Flinders.

Union . . . . Cannon R. Upper Flinders.

Inscription.

Coastal . . . . . Inland . . . . . Inland . . . . . Coastal

Actinia . . . . . 3. – [illegible]

Norfolk Island.

[illegible] visited it [illegible] from New Zealand. [illegible] any of the Squadron, and is only noticed here to record some Zoological information obtained from the Sydney Museum. — Its flora must now I suppose, be considered well known — Brought Home not yet [illegible] Special reference thereto. [illegible] and it will form a distinct region in the New Zealand System

Norfolk Island is not [illegible] people of Polynesian [illegible]

Zoology.

The land-birds, of which it will be seen the [illegible] very peculiar. — The Waterbirds are recognised as chiefly our old Polynesian acquaintance, which we had noticed in the Australian Coast. —

'Turdus' . . . . . Black bird of Australia & N. Zealand

'Ign' . . . . . 'Green bird' of Tonga & Navigators

Norfolk Island.

"Mellisphaga . . . . . Lewin." – (S. Mus.)

"Nest [illegible] Lath. [illegible] Norfolk Island, only 5 miles from Kingston [illegible] 1, 1.1 [illegible] [illegible] [illegible]

New Zealand.

The Bay of islands, situated in about S. Lat. 35° 15', of the projected future seat of government should rather have been called the Bay of Isles, - it certainly is remarkable rather for its number of islands or rocks, or both sometimes unnoticed. The charts usually give a good idea of the place, but it is presumed the latest Survey is exact. The land however is very much indented — The distance between the two Capes is stated at 11 miles, but this is in part corrected by the Boundary Bays forming the Opening, viz. Waimate Bay and Pierce Bay. The principal Bay within is named the Kiri-Kiri, the Waitangi, the Kawa-Kawa, & the Uyeaddy; which are a great part like rivers, broad at the Commencement, and together with minor indentations, render it almost impossible to move in any direction with out a Boat — indeed the distance of the land route from one station to the distance recorded as of three Mile Bays. Some guide idea may be formed from the fact that by following the Uyeaddy 3 miles from Kellow Point and taking a side branch a few miles south from the point where you leave the boat will bring you to Waimate Bay; — pursuing to the head of Uyeaddy a walk of about 4 miles over the ridge will bring you to tide water on the Waingaroa, and thence by canoe about miles and you reach the Coast. miles South of Cape Brett.

We remained at the Bay of islands from the 24th February, 1840 to the 6th of April, and the limit of our excursions was the head of tide in the Waingaroa river on the Western Coast a distance of about 20 miles, and the mouth of the Waingaroa river above mentioned.

The Tide in the Bay of Islands rises feet.

New Zealand

Feb. 24th 1840. — Came to anchor at Korowarika, in the Bay of islands, this morning at 5½ a.m. — We had been off the Coast for three or four days previous, and had been in sight of it from the South Cape to our present of destination. It presented much the same general appearance as that has been as at the Bay of islands. Our passage from Sydney had been a long hours one, and we experienced rather less than three distinct Gales.

Korowarika, at present the principal European Village in New Zealand, does not contain more than about 20 houses, all of wood and in Sydney, exclusive however of a considerable number of native huts, constructed by natives, on ground that has been rented. There is one Public House, which was crowded, and such was the difficulty of finding accommodations that we observed tents in various places. Provisions, and indeed everything was at extravagant prices — There was no timber to be had, or builders, if it had been procured. The beach sometimes looked pretty lively from the number of canoes, and boats from the Shipping and from different residences on the Bay. There were on an average about ten vessels in the Bay while we remained. The surrounding Country however is limited in extent, and by no means of a fertile description, so that if the place should ever attain importance, it must be in the way of Commerce. — An attempt however will probably be made by the N.Z. Government to remove the business of Korowarika to a Site purchased about three miles higher up, possessing it is true some advantages, being more that of a more desirable situation for steamers.

Rain coming on did not land till after breakfast, when I and Lieut Shaw, and then left Lieut for the residence of the American Consul, M Clendon, in company with Mr Drayton — Some of my fellow passengers who had come out for agricultural purposes were very much disappointed in the appearance of things and pronounced it a "Country of hills without valleys" — Remained at Mr Clendon's for the night having first taken a short excursion in the vicinity of the house

Feb. 25th — The forenoon was occupied in getting our baggage from the Brig and removed to our quarters at Mr Kelly's, about 6 miles from Korowarika.

[illegible]

Feb. 26th. — Excursion in company with Mr. [illegible] the above mentioned ridge, walking the whole length of the ridge, which is [illegible] but owing to the almost constant rain did not proceed far, and were glad to take to the woods. We [illegible] with very great difficulty, [illegible] saw with Mr Ellis not observed in the morning.

Feb. 28th. — Walked [illegible] Mr. Fidler. [illegible] in company with Mr. Wade, following the top of the ridge in its windings to a valley [illegible] ended, planted with corn &c. We were not aware of the time we spent in this excursion, this being the only time we were left to ourselves, [illegible] but ran to the water — the path at its commencement [illegible] which seems to be the general rule in New Zealand — the "gimmicks" in question avoided.

Feb. 29th. — Rained steadily all day and a storm at night.

March 1st. — Took an excursion with Mr. Brunton ridges above the old road, but went down a gradual ravine this side of the before mentioned ravine. Found that ravine very hard going, and the wind being still high were in no danger from falling branches, masses of perpendicular [illegible] and were under the necessity of keeping a sharp look out. — Returned to Mr. Fidler's early in the afternoon.

The storm had been very violent the preceding night, from the wind not [illegible] daylight the wind shifted to the northward & blew "a regular gale that [illegible] during the remainder of the day, with prospect of continuance, a short time after the arrival." — Most of the boats about the bay had been dragged [illegible] and the entrance embanked in front of the Missionary Establishment [illegible] destroyed. This morning news reached us of the wreck of the brig "Harriet at Tipparoa, near the mouth of the Bay. — One principal cause of the damage done

[illegible]

over the rugged heights of the hill during the night.

March 2. — Owing to the various disappointments and delays experienced at Sydney we did not reach this place till it was too late to think of undertaking any distant journey — we had all of us engaged passages in the "Prince Regent" for Hobart Town, which were advertised to sail for the Bay of Islands on the 1st of March, but the day previous we received notice that her destination had been altered — by this means we had lost the opportunities we should have had of visiting the Bay before the 3rd of March. — We were advised to be at the ship by 10 o'clock, but could not meet with certainty upon any knowledge of the Captain's movements, we therefore were obliged to go off in a boat at 6 o'clock in the morning. The most interesting to the Naturalist of any on the Island; viz. — The "Snowy Mountains, Copper, Native plains of Timber & Fern of the same intervening the Island."

Having abandoned all idea of any extended journey I prepared myself — boat to Kohimarama but upon this news appearing with the weather, the state of the roads, they said, rendered it out of the question; — the route laid out for me, was to Kiri-Kiri, Waimate, Tshami & home. Rain was a frequent of these five weather, and I was disappointed therefore in not being able to procure a boat to the Islands — at last through the kindness of Capt. Jones of the Victoria the brig that brought us from Sydney, I was enabled to cross the Bay, & a week of bad weather brought us to the Islands. Here I learned that a messenger had been yet much about further — and it was finally settled that I should remain here for the night to take a early start in the morning. It was fixed however, to visit the Bay of Islands. Some guides had been procured, & every thing was ready for starting. — At 7 o'clock however for which time I had ordered the boat, I found that the wind had changed his views.

March 3. — at about 9 a.m. we landed at Mr Busby's, opposite Korarareka and below the mouth of the Waitangi. — Mr B., formerly British Resident, was absent leaving the Island since the appointment of a Governor. He received me with great

kind

but that only a few seconds to spare, being unwilling to keep the [illegible] journey.

The arrival of a Governor, seemed to be the subject of the prayers uttered at by everyone, although the matter was publicly talked about on the first landing in Sydney. He made his appearance in the first place in Kingsby Council, and having succeeded the chiefs of the surrounding districts induced them to sign a Treaty by which they ceded the Sovereignty of the said districts. He now issues his proclamations and extends his authority over all Englishmen resident on both islands; which it seems is by no means, though not according to our ideas of justice. At the time I was first present the Governor was absent, in the Bay of Islands in the ship the [illegible] endeavouring to procure the [illegible] from the Chiefs at the South end of the affair was interrupted by an attack of paralysis, and also by the necessity of the Herald's repairing to Sydney. It is at present at the Bay of Islands, awaiting her return, and it seems that it is to be there detained for the present. — It would not have succeeded but for the aid of the Missionaries, who had received their instructions from home. — Power now it is said to be exercised by the Chiefs simply a pretended grant not transferable. There was a great deal of opposition at the time we left but it was not known how the [illegible] of the island in the same manner. — A Custom, Revenue Officers, Magistrates and other dignitaries arrived during our stay, and it was said a company of Soldiers would follow — an experiment we should judge not altogether [illegible] toward in the present State of affairs.

As connected with this subject we took some pains to procure information about an alleged trial for Murder by a jury of Chiefs. We learned that such a trial had actually taken place at, or in the vicinity of Kororareka; but under the direction or at the suggestion of a White; but that there was some reason to fear that the prisoner (who was Hart) did not receive that fair trial for defending in the evidence, to which he would have been entitled to in our Courts of justice.

From reasons given in the Book that Miss Bird would be somewhat out of way if I visited to go to Waimate I determined to proceed direct, and it was

was necessary even to re-visit even Otaua, the distance by the route I took it was 15 miles. — As I proceeded into the interior the land became more gently undulating but still exceedingly barren, the soil a stiff clay and the growth chiefly a species of fern (Pteris esculenta); which is understood to be the case with far the larger portion of the whole island. — Passed through a Native village on the bank of one of the branches of the Waitangi, the inhabitants of which, to the number of about 20 (exclusive of children), we found collected in a circle, the males each armed with a musket, as also 5 whom we had met on the route; — we were at a loss to discover the object of this, and supposed it owing to their partiality for the weapon, but nothing of the sort was subsequently met with, and it has never been explained to me. Purchased here a few Potatoes, Peaches, & one of them crossed over by. The river was very high, and on the Natives, a large party, were of late particular interest in getting us across — he stripped himself but notwithstanding his stature and all his care, he could not prevent a slight immersion. Arrived at Waimate at 1/2 p.m. — was somewhat surprised to find here a Flour Mill in operation, which was pointed out with an air of exultation by one of my Guides; — which together with the cleared lands, cultivated fields, fences, &c, were the work of the Missionaries. — Called on Mr. Davis, to whom I had a letter, and remained at his residence for the night.

March 4th. The weather seemed rather promising, & having consulted with Mr. Davis, concluded to change my route and proceed at once to the Hokianga. The matter was easily arranged with my guides, but neither of them was acquainted with the route it was necessary to procure a third from a village a few miles further on. We passed over the same of the Waitaruke, a Native town, and the most prominent elevation in the region. Halted on passed a fine lake, perhaps 2 miles in length, which I regretted not being able to visit, but we had "Waitaruke" to travel, and it was late when we started; and I was prevented by the same reasons on my return, as will be seen. A little beyond the Lake and perhaps 9 miles from Waimate we first entered the wooded region, which prevailed to the termination of our journey. At about 2 p.m. and just before crossing the Hokianga river for the first time, we met Mr de Thierry, at whose house we had intended staying, and who was exceedingly

p. 6.

[illegible] regretting that the tired men should be obliged to visit Waiwaiti on their return. At this spot we found the last two travelling stages, which we had thus far on the route, and the same thing happened to meet us on our return. The Hokianga portion however being much the worst travelling. — The difficulties of the way were began to increase materially — it was necessary to cross the river repeatedly and even to follow its bed for considerable distances — Many first urged to be carried at first, according to the usual method, but soon got tired of this and trudged on on foot. — My guides however had a idea of pushing on to Hokianga to night, and after delays on various pretexts, we were forced to stop, about 4 miles short, at Toonoes; a Chiefs [illegible] towned of native dwellings.

The Natives of New Zealand are well known to belong to the same race with the Polynesians; yet are usually represented with a peculiar cast of features and a prominent nose as if this were characteristic. It is true we can in general recognise a New Zealander, but I am afraid this is in a great measure owing to the tattooing. We saw every variety of feature, and could make out no difference in this respect from the Tahitians and Samoans — but their average stature seemed inferior, and not exceeding that of the latter.

This being the only instance in which the Polynesian race has been found without the Tropicks and entirely abandoned to itself, it is a point of interest to ascertain how near their character had approached to the Savage state; especially as the surrounding circumstances, according to our notions, seem favourable to a reversion. — It is presumed that the first Colonists, coming from the Polynesian Islands, brought with them typical productions if any, which of course were not adapted to the climate, and thus they were forced to abandon Agriculture (almost entirely), and not possessing the Hog, and the Country affording no game, they were reduced to subsist entirely on the Fern-root and by fishing. Such is pretty well understood to have been their original state (we will be more particularly explained), still existing on many parts of the Southern Island, and yet, I understanding the

the ferocious character they have born as Cannibals, these people in their [illegible]
[illegible] manners and habits, intellectual attainments &c. do not differ materially from
the Polynesians. — From many passages it appears that hunting is more or less
necessary, connected with the Savage life.

The "Taro" seems to be the principal [illegible] of the Polynesian tribes, — they have names for all natural productions, which
universally known — We learn from the Missionaries [illegible] concerning the introduction of the Sweet-Potatoes, viz — that "it was brought
to them of different coast, either from their own [illegible] and
sowed together"; which we have seen, is proved [illegible] at the Sandwich Islands. — From many [illegible] of N. Z. they
have divided the stars into Constellations, and make enquiries [illegible]
stars with [illegible] appearance" — The custom of [illegible] by [illegible]
[illegible] the lips.

They have agreeably [illegible]

Their Canoes are excavated from the trunk [illegible] of
considerable size, it is said 60 or 70 feet long, but they have no sail,
indeed it is [illegible] to give a boat sail if going to the [illegible]
to the North through the [illegible] passage [illegible]
[illegible] and consequently in the [illegible]

Notwithstanding their ferocious character, in their former wars they
seem to have been but poorly provided with weapons, and the principal
used to have been a sort of club usually [illegible] with [illegible]
and with both hands. We saw but few specimens of the latter, which were small and
blunt. The Bow was unknown to them. Slings were [illegible]
the Wars.

[illegible] the eagerness with which the New Zealanders [illegible]
[illegible] have [illegible] the [illegible] of [illegible] and [illegible]
[illegible] was not dealt with [illegible] [illegible] numerous effects [illegible]

Cannibalism seems now confined almost to the Northern District [illegible]
to the effects of the [illegible] wars. Whether Books idea of its origin be correct or
no, it is certain that the New Zealanders, apart from the [illegible]
Chiefs

New Zealand

Whites, ... Tahiti ... Friendly ... Society ... Sandwich ... now become ... — it does not seem to be generally understood that the ... were ... by the Whites, ... the Natives.

Peel is always cooked in New Zealand. — ... is the same as at Tahiti, but much more decently — and I think ... are better in their persons and all their habits. ... found of ardent Spirits. — Notwithstanding their readiness ... of Civilized life, there seems to be one very general Vice ... whom I met were very ... to their Sanguins. — We do not wonder therefore that Foster should have ... the preference to the Tahitians.

It is a singular fact if it should prove true ... a party of New Zealanders had lived at ... if pursuing or taking it the South West when they might have ... Tahiti ...

What I mean to allude to is a root but little ... Sassafras (Cyperus), as very abundant plant on this island ... to west (Moon). and the ... Natives ... employed ... Table dusting.

The Population of the North Island ... 100.000. Every part of this island is intersected with ... and is ... by the Whites. — It seems to be generally ... land is locally limited in the vicinity of the ... the introduction of Potatoes, Corn, Swine and various ... no poverty of soil &c. but was deemed owing to ... the numbers of individuals on board ... by them through the southern islands of the Pacific. —

I did not pay any particular attention to their ... — for they do not seem to be more exempted than the rest of the Human Family. We did ...

[illegible] any female tucked [illegible] wearing a nose, or any [illegible] [illegible] [illegible]

and left a short account subsequently. [illegible]

Diary (Page 37.)

March 6th — I proposed returning to day, being very desirous [illegible] for the Aparima River and being anxious [illegible] into winter, it would be necessary to push [illegible] evening I received word that [illegible] at a little distance on condition of his being here at daylight but he [illegible] and I was anxious for an early start on account of visiting the lake [illegible] mentioned. I learned further that he had left word that he [illegible] -ing till Monday, and he had the Waimate mare with him. [illegible] guide was very unwilling to go by himself — the morning was thus [illegible] encountering, but after breakfast I determined to make a push, I made [illegible] find the way myself if my guides would not follow. Through the [illegible] distance of the young Gentlemen a message was conveyed to the Lake [illegible] and I proceeded, followed at a slow pace by the remaining Guide. [illegible] nearly reached Davis's I had given up all thoughts of [illegible] by joined me. — Had a 2d instance of disinterestedness to day. Amongst [illegible] of Pode's friends, one of them presented him with a piece of pork for my [illegible] pea, as I learned subsequently. — I made one attempt to reach the lake [illegible] was prevented by lack of time, some slight difficulties being in the [illegible] was nearly dark when I reached Mr Davis' at Waimate, where I was [illegible] bly received as before. — I there first learned the return & illness of the [illegible] and that he was to be conveyed to this place in two or three days. — The great [illegible] of the Soil in New Zealand I find is measured by the height of Fern!

March 7th — Returned to Putiea, crossing the extension road-flat [illegible] early in the afternoon. I went to see Mr Davis, who had preceded me on [illegible] and dined with him at Mr Williams' house, Mr W. [illegible] absent. [illegible] Thursday, with whom he went to their house Te Waimate N. [illegible]

Putiea, opposite to Korowhitiwa, is the principal Mission [illegible] ment on the island, and being the residence of two Clergymen [illegible] is a better looking place than the last mentioned town, but it is much [illegible]

for business, it being difficult sometimes to keep in both sides of the Way for each individual to the Range.

March 8th Walked out in the afternoon along the road to Ravines to the right, before reaching that point met Mr Reed-crowded; and took another path to the Salt-Marsh. [illegible] Returned at the usual hour to the mess.

March 9th We all received an invitation to dine with Mr Reed-crowing, to accompany him to Tiffeona (some [illegible] the boat was in waiting at an early hour [illegible] Pongha, thence to Waderidge, [illegible] way. — We passed among the Black Rocks [illegible] kept rocks, which Mr Dunn informed me are [illegible] at about 12 a.m. — Here a Sale was to be held of the Wreck [illegible] found that it was but a short walk to the Sea-Shore [illegible] found it could not be reached within the time allotted; [illegible] hours among the high hills in the vicinity, [illegible] — Returned without accident. Spent the rest [illegible] excursion. —

March 10th — [illegible] the Wreck, — after reaching the battered hull, followed the [illegible] man its junction with a large [illegible] ascended for some distance, then ascended a ridge [illegible] -led point covered with wood, perhaps 3 miles distant [illegible] Returning took the wooded ravine by which [illegible] then descended and gained the path. [illegible] by the hospitality of a native returned [illegible] 3 o'clock. — Reached home about sunset, [illegible] Officers of the Virginia Mail, which [illegible]

March 11th. — Used to shoot [illegible] a company will [illegible]

March 12th. — Having received [illegible] half way between this and the opposite coast, [illegible] ing there and beyond to accompany him. — Guides [illegible]

led to suppose that we might proceed direct to Island - but as the pilot
the "Su" or Native Village near it, it was found that it was more
to go to Kaiteia. This "Su" is situated on a projecting
adapted for defence, was in the middle of the cultivation,
deep water came up between and attached to the pilot
Waitemata Bay, but immediately in front to the
Bay. Though possessing some fine trails he
be a very ugly ultimately character, and is charged with
and cruel. We learned a singular fact in the
the war with the Hongi-Waika people, about
killed so many of their opponents, that
gave them a tract of land as a compensation! —
tribes coming from a distance to the
right to it, & the real number of
the latter.

We were fortunate enough
soon. The time of tide rendered it necessary to
instead of crossing the flat before mentioned. We
a great deal of difficulty
and to day, the Saturday, Mr. Davis
of the gentlemen we first met with on the
from taking us two or three miles
leave him here through the
to Waimate, who accompanied us
evening; but though evidently disappointed
passing in the vicinity of Waimate about
bell, an unexpected sound to Mr. D, in the
It was dark when we reached the Stockaded
(the common before we found) where we
from the head man who called a native
house to us for the night.

New Zealand.

March 13th — Started at an early hour and walked about 3 miles to "Tikanui," we rather the Stockaded "Pa" on the Piako under Pouroa, which was our point of destination. Thence to the "Hot spring" some 3 or 4 miles and returned. In the afternoon took the return track, but after some time turned off to the right to the farm of Messrs. Williams Bros., the most convenient point for reaching the principal crater. — The soil in the immediate vicinity of these craters is uniformly found loose and of inferior quality to the rest. — It was late in the afternoon when we arrived, and we took up our quarters here for the night. — We were surprised at finding [illegible] in this region, and it certainly will not be for the lack of an enemy if they should hereafter fall behind hand. — "Cupidity" however is said to be their great enemy.

A war party, residing in the neighbourhood, came in [illegible] sunset — We had heard guns while near the Hot-springs, and the party had been in that direction; but it was understood that the difficulties had been settled and without bloodshed. — Before we left the Bay of Islands, a white man in the employ of the Messrs Williams was murdered by Natives, but we did not learn the result of the investigations.

March 14th — Walked to the Crater, descended to the bottom & returned, which occupied the forenoon. Dined with the Messrs. Williams and started on our journey at 2 p.m. — Obliged by the tide to take the same route as before, and did not arrive at Paihia till near dark — there was a storm at the time and it was so rough that we [illegible] there we could get off to night, — but Mr. Williams, &c., [illegible] hands, natives who understood the management well, and started [illegible] bound the Bay in fair, when we removed for the night.

March 15th — Returned to Mr. Tibbey's, & remained [illegible]

March 16th — Not having yet had any fair opportunities [illegible] Fruits and other productions of fruit nature, I proposed to Mr. Drayton a boat excursion to the Falls of the Wailungi, & Mr. Tibbey [illegible] We started

in good order, and reached the Lake without difficulty, not even the [illegible] the mouth of the river; but the Bay was found impassable. [illegible] portion of Mt. Wade where we found on the beach a little above Paihia.

March 17th – 20th. — Occupied with Specimens. –

March 21st. Left Paihia with Mr. Smith & crossed over to the Mouse towards the point, but not being able to reach the [illegible] being cut, proceeded to Kororáreka & Russow Bay, [illegible] ing the boat still here, returned to Mr. Bibby's the same evening.

March 22d. — Occupied with specimens. –

March 23d. — Fishing in the morning with Mr. Drayton — Occupied with Specimens.

March 24th. — Fishing in the morning with Mr. D. — Went with some company to the [illegible] Mr. Clendon's. Returned at 4 p.m.

March 25th. — Went to Kororáreka & Russow Bay in company with Messrs Dunn & Veale. Walked along the Shore towards the head of the Bay, collecting Hydrophytes and other Marine productions, in which we met with tolerable success.

March 26th. — Excursion with Mr. Breckenridge along the [illegible] crossed the cultivated flat and took a track along the opposite [illegible] various direction; but did not meet with any great success, the Birds in this vicinity having now grown shy. — The same evening learned the Arrival of the Pelorus. –

March 27th. — Went on board the Pelorus and there examined a collection of Plants from the Auckland Island about 30 in number, and found them extremely interesting, and many in all probability new. A comparison from the rare plants presented me by Lieut. Maury confirmed the [illegible] character of the Flora of these islands is decidedly New Zealand.

March 28th. — Commenced our proposed excursion to the head of the Bay, in company with Messrs. Dunn & Breckenridge. Went up the Waiende to the track, at Mt. Pukeiti about 10 miles. Here we found a [illegible] a blockade, and having procured a guide with some difficulty, proceeded by land to cross the ridge. The prospect from the highest point, which [illegible]

fine

gentle slant of a thousand feet was extended and very fine including the coast the Eastward of the Bay. – further on we observed a remarkable hill peak which seemed higher than any other point in this region. – We had started about 8 p.m. and it was within half an hour of dawn when we reached the head of Wanganui river or Bay, a distance of perhaps 40 miles. Here we obtained a canoe, and passing a "Pa" now untenanted except by one family, situated a little below the head of the Bay, landed at a cluster of Huts near the mouth. – Wanganui is stated to be a good harbour, which was confirmed by the testimony of the Natives, who mentioned several vessels that had been in there. – We found here about a dozen natives, men, women & children together with an aged chief who had "tabooed" himself and would not speak to or look those in the market. Our supper & night was quite varied & rich of Pigeons, boiled and roast, Potatoes.

March 29th. – Walked along the beach opposite to the entrance of the harbour and among the rocks beyond, meeting with a good deal of game, especially in the Botanical way. Found here a Shrub that will be useful on this coast to the river Manawe. – We had fish to buy for breakfast & dinner. Started on our return early in the afternoon, but being light-handed were obliged to paddle ourselves the greater part of the distance. – Found the head of tide in good season, and my companions not liking the appearance of the river, were desirous of continuing on & some shots at an encampment we had observed yesterday. It was however thought advisable to remain. We passed the night very uncomfortable, the place being very filthy, swarming with vermin and full of people.

March 30th. – We were glad to rise with the sun and commence our journey immediately. – When we reached the encampment before mentioned we stopped to breakfast, which was rather a frugal meal. We had with us but one of the natives being "tabooed" could not light his pipe by it – & necessary to strike a light for him ourselves. The place we also found untenanted being a sort of hospital to which the sick resort. – Reached the native's before noon, and had time to do some fishing in the fresh water, in which we were successful. In the Botanical way we did well & each gathered a

Specimen

Thursday June, and then took leave with Mr Wilkes who left us for [illegible] reached home before dark. — Mr George Darby, of Sydney, then residing near us, accompanied us in this excursion and by his knowledge of the language and habits of the natives rendered our way very agreeable.

March 31st. — This morning we were awakened by a boat from the Vincennes which vessel had arrived during the night. — Went on board and took breakfast. Returned in the course of the forenoon. —

April 1st. — Occupied with Specimens.

April 2. — Went over to the Consuls before breakfast & thence to the Vincennes. Returned at 2 p. m.

April 3. — Writing, &c.

April 4th. — Writing &c — Got my luggage &c. on board the Vincennes.

April 5th. — Sunday. Remained on board. Blowing from [illegible] cold, a very prevalent disease at the present time.

April 6th. — The Vincennes got under way about 11 a.m. and [illegible] we were well off the Coast.

Geological Structure

The district which fell under our observation may perhaps with propriety be termed Volcanic throughout for we saw no rock but what had evidently been more or less modified by heat; and we are not sure but that the appellation may be extended over the whole of both islands. Of it is said Coal is said to exist at the river Thames and other localities, but the [illegible] further evidence; although it was very generally asserted. Casts of [illegible] which we saw from the river Thames, were rather [illegible] occurrence, and militate against a Volcanic character: — an absence of [illegible] and the reputed presence of Limestone in one or two localities. — Mr Davis however considered the whole island as Volcanic

We saw no Granite, notwithstanding the printed assertion that this was a Granitic region; but very variety of Sandstone or Conglomerate, about the

Bay of Islands it was very often a Compact Argillaceous rock; much seamed or split very in various directions, but nowhere distinctly slaty in its structure. Its fragments were very sharp and jagged, and its appearance during the heat of summer [illegible] one of Volcanic. Some of the specimens assumed a purplish colour, and increased hardness, like the basis of Porphyry without the included substances. Siliceous minerals seemed singularly rare. — At various times around a [illegible] centre, as at the "Black Rocks" and Bottle of Waitangi.

It seemed very easily decomposable, and was only exposed [illegible] cliffs of the coast. Notwithstanding the numerous minute objects [illegible] every stage, the whole region was covered with a layer of clay, the result of decomposition. — In looking at the Topographical features of the district, the manner in which the land is as it were, dissected out by [illegible] might be tempted to attribute much to the action of rains and running water than is warranted by experience. — We know by the example of Iona that the rains only slightly modify the surface, removing the [illegible] of Upland, and furrowing the [illegible] — [illegible] is known to have a preservative effect on soil, and in [illegible] remarkable instances in the bay of Islands, the rocky shore [illegible] visible, often presented a steep at low water; similarly in a small [illegible] the most steep we met with were in the Vegicles. — Something of the same kind was occasionally seen where the rocks were more exposed to the surf. — The Upland was so exclusively covered with clay, that we did not meet with pebbles or boulders.

On the interior however the rock occasionally did make its appearance in a few spots, and here was always found to be Vesicular Lavas — It is true they were for the most part in the vicinity of the Craters or Volcanic cones [illegible] such instances it has been already stated that the soil changes its character being more loose and better adapted to agriculture.

Notwithstanding Mount Egmont is [illegible] it did not [illegible] once before rose a pillar of [illegible]; and was most struck with the [illegible] of their form. There are several in the Tikanui district, all [illegible] The principal one, situated near the farm of the [illegible]

have been 500 feet above the surrounding coast; and sandy at the
with a breadth of from 40 to 50 feet wide; the interior was all grown over with
trees, and Mr. Dana and myself descended to the bottom without difficulty.
We noticed on our way to the lake at about the spot where the ground became low,
and were informed that holes or irregular cavities of water were met with
and more or less perpendicular in their direction, existed in some parts of the
district, but we did not visit them. —

There seems to exist a pretty distinct range of highlands parallel with
the Western coast, and crossing the Wokianga river at the head of tide. We
did not see the rock exposed; but the soil is evidently improved in quality,
being entirely covered with woods, and it is possible the subsoil may
may differ in character from that around the Bay of islands, though we
suspect the contrary. — None of the summits in sight appeared to be more
than 1500 feet above the sea, which is probably not higher than some parts
of the Central district — about the Bay of islands the highest hills
seemed to vary from 200 to 500 feet; and the highest, at the head of the
could not have fallen much short of 1000.

In all the narrow peninsulas of the island, the soil
is almost throughout, so far as we passed thro, of a fine excellent
in height. The broad part is known to contain a very large
one of which, centrally situated is known to be covered with
the same is said of Mount Egmont [illegible]
of the island. Mr. Williams in travelling from Port Nicholson to Wanganui
a district from which the coast is about sixty miles in the space; and Mr.
Brown four days before embarked.

It is also in this broad part of the island that Volcanic phenomena
a large scale are met with. Mr. Williams spoke of great quantities of Pumice, extending
entirely around the island; and traversed a plain which sloping from some
disclosed a bed of this substance 3 or 400 feet in thickness. He described
"Tepuke" or intervening [illegible]
There does not however appear to be any active Volcano on the
[illegible]

on south shore of river on the East-coast, one a small island in the Bay of Plenty.

The casts of small bivalves shown me from the Plumes were not sufficient to determine anything respecting the age of the rocks.

The green stone or "jade" out of which various ornaments are highly prized by the natives, is obtained from the Southern Islands. The finest specimens I have seen by Mr. Dana are.

The Hot-Spring of Tikauia is rather an emission of gas than Water. It is situated in a small basin, without outlet (the only one seen), the waters of which are received in a lake of 300 Acres. Along the border of this Lake and over a space of several Acres behind the gas is continually bubbling up, usually through water, to which it gives the appearance of boiling. The water is not warm in ordinary places, but seems to be such in those where the gas most abounds. The ground near exhibits evidences of sulphur about the place and it has appearance, as if the surface had been extensively burned. Sulphur is found. And all around, not more than about eight feet from the water, is a white substance Mr. Dana "Alum," possibly mixed with Sulphate of Iron. The water is strongly impregnated with gas, after much discharged and it smells and tastes reminded us of Hydrosulphuric Acid. A portion of the gas was bottled by Mr. Dana, but met with an accident before it could be analyzed. It is not inflammable, and had it been of a deleterious nature we must have perceived it on the spot such quantities were emitted — on the other hand it is not distinguishable either in breathing or by the smell any thing different from the common Atmospheric air. Medicinal virtues are attributed by the natives to these waters; and they are said to be resorted to especially by those suffering under a disease contracted from the Whites.

We also passed a small stream impregnated and coloured with Iron, which emitted very powerfully the smell of Sulphuretted Hydrogen, although there was no perceptible evolution of gas.

New Zealand.

Climate

The climate differs somewhat from that of Australia, being colder and more variable, perhaps owing to its insular character and to the absence of any continuous mountain chain. New Zealand has a moist climate, and is subject to very sudden changes of temperature between day and night, and also from day to day. The opposite days in succession, and indeed the great defect of the climate seems to be a want of uniformity, often continued for several days together. Neither crops nor trees attain the same perfection as at the Bay of Islands, although only a degree or two further south than Sydney. Indeed the climate is not without analogy, even to that of England, as in its adaptation to the oat and potato. Rain is not so frequent as in England, but more frequent than in New Holland.

Judging by our own experience it will be seen that for the first week we had many showers out of the time. At the same time it must be recollected that during the greater part of the year they would be rain, the weather was decidedly fine. The months of the year however are found, not to be regarded as the days are. Mr. Yeomans, who had resided here some years, had seen but one day at the Bay of Islands, but twenty in the whole week.

Vegetation.

It is difficult to regard the Flora of New Zealand as at present indigenous, although it must be confessed that the materials for a rich crop of Creation, are rather scanty. Pending farther researches, we may remark that much is commonly supposed will be found manifest; when the vegetation come to be more thoroughly investigated. Nevertheless the Flora on the whole is rather a poor one, by no means raised as that of Australia, and probably will not afford more than

[illegible] species, [illegible] it would be true in kind, in all [illegible] genera. [illegible] to the [illegible] Phanerogamic plants.

[illegible] [illegible] in its branches [illegible] simple leaves. Here is [illegible] of the [illegible] New Zealand the most is like that of the west of the West. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] flora. [illegible] [illegible] [illegible]

[illegible] the [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

New Zealand.

Tropical & Tropical Analogies. — On the Species common to [illegible] with Australia & the Pacific Islands, we may remark the [illegible] Elæocarpeæ, Gnetaceæ, the Dracænas, a Palm (Areca) & some Liliaceæ [illegible]; & a Dracæna;

— besides the prevalent more general tropical Climate, with its [illegible] of herbaceous plants; the great variety of trees of many diverse genera; Epiphytic & shrubs and a profusion of epiphytic Ferns; Arborescent Aroideæ; abundance of Coffeaceæ; Piperaceæ; various species of Hymenophyllum; [illegible] is the deep [illegible]; the [illegible] the most remarkable of the Island's productions, [illegible] evergreens; Meliaceæ, Apocyneæ; Arborescent Compositæ; Gleichenia; Areibu? [illegible] & other Filiaceæ; Avicennia, along the coast; & Guilandina, [illegible] up to Port [illegible].

The Extra-tropical character of the vegetation is however abundantly indicated by the presence of the Pine Tribe — also by various Epilobiums, a Stimeia ood [illegible], Ranunculi, Rubus, 2 sp., a [illegible]; Geranium, Wahlenbergia, Linum, Gnaphalium; [illegible]; and in the South by Gentians, an Andromeda, & Myosotis? —

Other Austral analogies &c. — Besides those forms above mentioned as belonging to the Australian Flora, we may enumerate those more general in it, & other as Lilurgonium, Weinmannia; Proteaceæ, but of peculiar genera; Restiaceæ; Uncinius, Mesembryanthemum; Uncistrums, Drymis [illegible] — Which reduces the commonly reputed American & Magellanic forms, to Hebe (or the decussate-leaved shrubby Veronicæ), Fuchsia, Myrtus, Nertera, gen. near Crassula [illegible], gen. near Gaultheria

[illegible] not a Fuc required to find one Arctic & N. American Form, i.e. a Polygalum, closely resembling P. Lunariæfolia of the United States. —

Characteristic forms. The above genera &c., excluded we have now to consider

what remains, and may be regarded as Characteristic. — [illegible] the variety of the Pine Tribe, in which it is even possible that [illegible] may be found to excel all other Countries. Scandent Myrtaceæ belonging to the [illegible] Dicotyledonous page. [illegible], which is a remarkable genus here and exists in the Mysorian islands, but was not seen in Ceylon. [illegible] a remarkable Dracophyllum? [illegible] having the habit of a Freycinetia or Dracena: the remarkable and beautiful Pittosporum [illegible] remiformis: — The abundance and variety of Ferns, Lycopods &c with, especially in the Tree-tropical climate; which is counteracted in some degree by the frequency of the Epilobiums. The Rhipogonum, a twining climber among the Forest-trees; the showy Edwardsias, the remarkable Rhopalium; and not less than [illegible] peculiar genera of Ferns Hymenophyllum, Dacrydium, Rhamnus.

Particular Description. On our arrival at the Bay of Islands the Vegetation presented a type quite [illegible] in the latter; resembling in no inconsiderable degree of Terra del Fuego. The ridges and hills [illegible] part of the Island [illegible] of trees, so that even for [illegible] at Sydney, to know whether we were in a Tropical Forest region, [illegible] a different cause. The greater part of the district that fell under [illegible] vation was in like manner destitute of trees, and we understood from the [illegible] -arises that this was the case throughout the greater part of the Island. The Woods were for the most part in [illegible] confined to the ravines and [illegible] as we approached Hokianga (on the Western Coast) that we found [illegible] Forest. We endeavoured to discover the causes of this remarkable [illegible] the fact, that trees of the New Zealand type were adapted to a [illegible] -rile soil — even the Pine tribe prevailed in other countries, here [illegible] the most fertile situations. The only exceptions we met with on the high [illegible] ridges &c, which scarcely admit the growth of the Woods we found [illegible] Podocarpus ..... 2 sp., which are sometimes found on the tops of the [illegible]

the preceding. [illegible] two more genera for [illegible] the Kauri [illegible] the Kauri, [illegible] in the midst of the [illegible] way [illegible] with the [illegible] were shewn [illegible]

The Open Districts are in fact the greater proportion [illegible] Pinus excelsa, resembling P. aquilina, but more compact [illegible] in the latter), varying in height from [illegible] were when the soil is [illegible] Arborescent Leptos. [illegible] of which the [illegible] part of Leptospermum scoparium the most frequent — a Dracophyllum and [illegible] other Epacrideæ, and a small leaved Leptos.-like Pomaderris,

[illegible] consisting of Lilliputian [illegible] close set trunks and in general [illegible] same manner as the [illegible] remarkably [illegible] with the usual character of foliage. Next of most frequent occurrence is perhaps the dwarfed Veronica (Hebe) salicifolia; the Veronica [illegible] is also common, as V. Gerardii? a. lycopodioides [illegible] and it would seem, many plants! [illegible] of the Lower [illegible] forms, as Weinmannia, [illegible] Pimelea, as well as several [illegible] Dracophyllum [illegible] Discaria [illegible] Coprosma [illegible] Muehlenbeckia [illegible] Aciphylla, a Daisy-like Compos. [illegible], a tufted Scirpus, [illegible] reticulata.

The Forest. It was only in the Hokianga district that I had [illegible] of seeing the forest in its [illegible] Kauri (Dammara) [illegible] Tree Ferns [illegible] Palm (Areca) acquired a stem and bore fruit [illegible] Tree Ferns were only in a few [illegible] common every-where, principally the Cyathea dealbata. — In various places a narrow-leaved Freycinetia invested the trunks of the trees as at the Samoan islands [illegible]

[illegible] to ground. But perhaps the most conspicuous object on the woods was the Epiphytic Vegetation [illegible] its huge tufts investing those of the Dicotyledonous Forest trees, & covering every [illegible] both of dead and living wood. Epiphytic Orchideæ were rare. Though in some what greater variety than is generally supposed. — Among Epiphytic Ferns we may enumerate 2 Lycopodiums, 4 or 5 Polypodiums; a creeping Stegania [illegible] whose lower leaves were so small and different in appearance from the upper, that the whole would not easily be suspected; but especially the remarkable Asplenium flaccidum, often entirely pendulous and giving [illegible] a very striking & beautiful appearance. — Of proper parasitic plants we observed 3 species of Loranthaceæ, all however rare and inconspicuous.

Among the most remarkable productions of the forest is the Cyathea [illegible] before mentioned. This at times attains a height of 20 or 25 feet in height with a trunk 6 to 9 inches in diameter. It is finely branched giving it a graceful appearance, and the fine dark green of its leaves, 2 feet or more in length, are only at the extremities. The general aspect is something that of a Dracæna or Yucca, & were it not for the absence of a terminal tuft of leaves, would remind one of a miniature Pandanus; and few at first seeing it in the living state would suspect its real affinities. — In general it is not a very common plant.

Scandent-Myrtaceæ are I believe peculiar to New Zealand. Woody stems, even with them very small flowers, and berries with prominent white [illegible] To see the young shoots [illegible] climbing over, & apparently about to overwhelm the tall trees, would excite the first astonishment; but on a nearer examination [illegible] its branches extremities [illegible] to the summit of the tree, & its leaves [illegible] [illegible] for food & covering. In ascending the trees among the dense tops (not to the largest stature), so as readily to deceive the inexperienced. The bright green [illegible] [illegible] [illegible] [illegible] long slender [illegible] [illegible] [illegible] [illegible]

[illegible] the foliage may be distant enough to be [illegible] positive.

The first one [illegible] to strike [illegible] the [illegible] of the [illegible] of the foliage, [illegible] the [illegible] [illegible] [illegible] but was invariably [illegible] with the [illegible] of their running to select the most fertile spots — and [illegible] their robust appearance [illegible] of a tropical habit. The Kauri Pine (Dammara australis) [illegible] of the finest trees in existence: the trunk is upright for a [illegible] tance, but not throughout, and large branches are given [illegible] spreading [illegible] [illegible] by 12 in diameter at base. — The [illegible] Dacrydium cupressinum, [illegible] has common [illegible] the usual habit of the family; [illegible] upright [illegible] horizontally, and the extreme branchlets [illegible] [illegible] Rimu, Red pine (Dacrydium), [illegible] a large [illegible] dry but [illegible] will long [illegible] [illegible] head again [illegible] [illegible] Totara (Podocarpus Totara) and the [illegible] [illegible] [illegible]) with [illegible] [illegible] were cut, one [illegible] by us, and did not exceed more 30 feet. [illegible] Podocarpus [illegible] with the large [illegible] [illegible] [illegible]

remarkable in its foliage, was yet a Vine in its mode of growth, its boat [illegible] not long [illegible] about 40 feet high and its horizontal branches [illegible] not [illegible].

The other Forest trees [illegible] be very various genera, almost as in Tropical, but it was [illegible] to find the forms of vegetation in most [illegible] that we were obliged to leave many undetermined. Griselinia lucida [illegible] one of the most common, or at all events most conspicuous in the foliage, [illegible] and sometimes full 30 feet in height. Weinmannia [illegible] with opposite racemes was perhaps the most abundant of all, as well as the only one that showed inflorescence in profusion; it did not usually exceed 40 feet, the paniculate Weinmannia [illegible] was rare, but perhaps exceeded these dimensions. — The Abeliceae [illegible], the only representatives of the Rhus tribe also became tall trees. — The "Kohutuka" [illegible] was one of the largest and tallest of all, certainly at times not falling short of 100 feet. Gen. sp. No. 30 [illegible] usually less, but extremely common. — Knightia excelsa, remarkable for its dimensions [illegible] was of the Proteaceae [illegible] generally different [illegible] 40 to 60 feet in height. — n.g. Lita Vitex [illegible] extremely common, and often seen in exposed situations, 50 or 60 feet in height with rigid irregular branches, and leaves [illegible] rest. — Metrosideros [illegible] No. 1, usually 80 feet high, and 2 to 3 feet in diameter, with rather small foliage — Metrosideros [illegible] 2 to 3 feet high and 1 foot from the next species. To these we may add, gen. No. 31 [illegible] not unfrequent, 30 to 40 feet in height. — Myrsine? [illegible] with white, linear leaves, of about the same dimensions. — Dacrydium? [illegible] No. 32, common, but not usually exceeding 25 or 30 feet. — gen. sp. No 33 [illegible] occasionally met with, 30 to 40 feet in height. — gen. sp. No. 34 [illegible] with Aroma-like leaf, 50 to 60 feet, and very common. — gen. sp. No. 35 [illegible] 60 to 70 feet, partly generally diffused. — Protea [illegible] near Parsonia, 20-30 feet. — gen. No. 36 [illegible] about 30 feet in height. — The "Karaka" [illegible] remarkable for its smooth & beautiful foliage, common and 20 to 40 feet in height. — Melicope, 30-50 feet. — [illegible]

We must not forget to mention the Nepenthes [illegible]

on mountains bordering the woods, and which though rarely exceeding 50 feet in height; it is this tree, with its feathery leaves, that gives to the forests of New Zealand; that peculiar character which is most observable on the tops of the ridges, on entering the Bay of Islands &c.—

Amongst the Trees we have not yet mentioned the Dracaena indivisa, found chiefly on the margin of the woods with the Leptospermum, and remarkable for the large size of its leaves. The trunk sometimes attains the height of 12 to 15 feet, but is usually much smaller, and commonly is terminated forked; but is very small, and not in great abundance.

The Melaleucas and Metrosideros are common in the woods, and the latter in the open country, but in a stunted condition; the leaves are very small, and the flowers in great abundance. The Metrosideros is a beautiful tree.

[illegible] become a large tree at last, but is for a long time a slight. The young plants of this tree climb, twining round the trees, and have a light ornamental appearance, especially, when in flower, as the flowers are produced horizontally or deflexed around the slight stem; all the parts of the plant are astringent. The gum that exudes from the bark is used as a dye. The Metrosideros is also used in making canoes.

The Podocarpus is the most common tree, [illegible] and Dacrydium; perhaps 2 species, young plants of all the preceding trees; there is also the Aristotelia racemosa, Cyathea medullaris, Pteris aquilina, besides Convolvuli [illegible] 2 sp. with ornamental flowers, Lobelia 5 to 15 feet high; Pittosporum [illegible] 2 species, one a good tree, the other a shrub; Coriaria ramosissima 20 feet in height, but not very common; Coprosma [illegible] 10-15 feet in height, also not abundant; Aristotelia? australis [illegible] Apples of the climate good; Rhamnus excelsus, 6 to 12 feet, the bark bearing nuts, common in moist situations but rarely in flower; [illegible] bearing fruit with the natives, with [illegible] with specific name Edulis, 8 to 15 feet [illegible]

[illegible]

to which we may add some undershrubs, remarkable for [illegible]
[illegible] with flowers [illegible]
and unfrequent; genuine Nov 40 . . . . . ; perhaps a 2 species of [illegible]
. . . . . larger in all its parts and more of the usual habit; [illegible]

The vines are principally the Rhipogonum, [illegible]
covering the tops of trees; in some places it [illegible]
intertwined, that nothing is discernable singly. The [illegible]
is much more abundant on the coasts, and at times becomes a [illegible]
pediment. — A singular Rubus . . . . . (with human hairs, [illegible]
are according to a considerable height. The Ripogonum [illegible]
Nov 40, are comparatively rare and [illegible]

Beneath the shade of the Forest, Herbaceous plants are [illegible]
rare — it is only in particular places that the Elaeocarpus [illegible]
. . . . . [illegible]
of Ferns, in considerable variety; and in the deep shade and dampness
of trees, abundance of Hymenophyllums and Trichomanes [illegible]
remarkable Nov 40, with a profusion of Lycopodiums and Hymenophyllums
mixed so prettily frequently with Orchideae.

Fungi were observed occasionally, but did not [illegible]
abundant or various; at least the conspicuous species. —

The drowned knowles were pretty exclusively occupied with the
Nymphaea [illegible] an extremely attractive plant in the habitat. [illegible]
that was a little less watered, and especially on the [illegible]
were pretty frequent, and it was not, in such situations, that one
saw it naturally. It was thought to attain [illegible]
Pancratium australis, and 20 feet in height, with a [illegible]
highly ornamental plant.

Aquatics. — We should not [illegible]
aquatic plants, still we found a great variety of [illegible]
than is commonly supposed. We may mention a [illegible]
[illegible]

[illegible] Rhizophora, [illegible] Bruguiera, [illegible] Sonneratia, [illegible] Avicennia, [illegible] Excoecaria, [illegible] Hibiscus tiliaceus.

Maritime Vegetation. [illegible] Bay of Islands, [illegible] of Mangroves, Avicennia resinifera. [illegible] often [illegible] at each [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] plants.

Behind the Mangroves [illegible] genuine Salt-Marsh, [illegible] (Leptocarpus) [illegible] a yellowish tint at a distance. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Gen. sp. n. 41 . . . . . , abounds with the same habit, appears to be
found of the salt water. Also Gen. sp. n. 42 , a
with minute abundant leaves
. . . ; and here the same [illegible] of
the smaller Epipogium [illegible] . . . . . It was found with
peduncles at the end of the month; Epipogium with the
leaves [illegible] and most abundant plants; a [illegible]
. . . . Dipl. sp. sp. n. 43. ; petals [illegible]
having the habit of a small Viola; Calypso [illegible] ;
Bucchanii habit; [illegible] . . . Dipl. and a [illegible]
a Variation.

Another of the [illegible] plants was found about [illegible]
coast. It was in specimens of three, [illegible] a
large bulb sometimes subject to disease, with [illegible]
over the salt-marsh, and a prominent plant in [illegible]
Sieberii, [illegible] . . . . . [illegible]
expand standing; [illegible] . . . . . [illegible]
praecalata & n. sp. n. 44 . . . . . both abundant and [illegible]
within the shallow tidal [illegible]

Among more humble plants, the large tufts of Epipogium nutans were [illegible]
[illegible] The narrow leaved Hymenophyllum rarifolium, Ehrh. [illegible]
to the [illegible] of the Epipogium, sometimes almost entirely covered exposed cliffs [illegible]
was very rare and in bad [illegible] . . . . . Hymenophyllum Hookeri
was chiefly found here, and rarely in the bottom of [illegible] . . . Asplenium
was also more abundant here but by no means [illegible] . . . Asplenium bi
cuneatum, Fr. . . . . a Pteropicuous plant was [illegible] . . . Polypodium
vulgare, was chiefly observed in moist places near the coast. Euphorbia
glauca Fr., common; Linum monogynum rather rare; & Veronica
only found at Wanganui.

Among the plants which may be considered more exclusively [illegible]
shore, along the shelland shore of the Bay are in most exposed [illegible]
may be mentioned Salicornia . . . . . extremely common; as also Triglochin

, apparently different from the [illegible] ; [illegible] rather rare ; Wild bees, Apium, often met with ; Pittosporum less frequent in the clefts of rocks ; Olearia [illegible] rare [illegible] grass, Cyperus, also rare. The light [illegible] abundant , on the other hand were abundant.

On the Sands, or sea-beaches, a Calystegia [illegible] Soldanella, was frequently met with ; and in many places the Spinifex in flower, covering over the sand and binding it [illegible] the Prevailing North. — But it was at Wanganui that we met with the most interesting plants, the Isolepis? Spinulis with its thick crispy [illegible] needly like a clump of the tribe with which I am acquainted. [illegible] dense tufts of the leaves singularly counterfeiting the Aloe [illegible] Hangi growing in bare sandy soil of a bottom deposit [illegible] appearance with jointed worm leaves — the point [illegible] [illegible] [illegible]

We must not quit without making [illegible] New Zealand [illegible] a proper Equine point, viz. Brachyura?, and perhaps even the [illegible] species.

Peculiar Families. There are, I hope [illegible] Myrtaceae, and yet I think there are some others that deserve to be considered; at least there are some that approach them in frequency. — Next however may perhaps be placed Umbelliferae, Compositae, Gramineae, Cyperaceae, which are [illegible] abundant and [illegible] could. It would, I anticipate, be natural to [illegible] [illegible] in all situations, barren ridges, margins of woods, Mountain ground, and especially exhausted bogs in the interior; I put [illegible] Leguminosae, which are only common but in one family, Papilionaceae, with [illegible] the eighth place to Graminaceae, [illegible] are [illegible] [illegible] [illegible] the wild where they were so rare and inobtrusive, unless it be the Polygonaceae [illegible] we have besides various [illegible] that [illegible] [illegible] [illegible] could not but remark how closely each seemed to adhere to the [illegible] [illegible] the Native.

The other families that may deserve notice from [illegible] [illegible] [illegible]

ferns; the Lauraceæ, from the frequency of Litsæa; the Myrtaceæ from the abundance of one species; the Epacrideæ, the species of which are pretty often met with; the Coniferæ (Dacrydium) are great, upland trees. Through the woods; Musci & Hepaticæ, for the abundance of which New Zealand is noted; Lichens, chiefly however confined to the trunks and rocks of the coast, for the rocks are often bare of soil.

Absent Families. Our list is fully extensive as well as interesting, yet does not include all, as several it seemed hardly worth while to enumerate, such as

Gilliesiaceæ
Anonaceæ
Menispermeæ
Berberideæ
Nymphæaceæ
Papaveraceæ
Fumariaceæ
Capparideæ
Cistaceæ
Violaceæ
Polygaleæ
Caryophyllæ
Malvaceæ
Byttneriaceæ
Hermannieæ
Aurantiaceæ
Gyttiferæ
Hypericineæ
Acerineæ
Ampelideæ
Zygophylleæ

Rhamneæ
Celastrineæ
Ilicineæ
Vicieæ
Rhamneæ
Amygdaleæ
Spiræeæ
Roseæ
Pomaceæ
Combretaceæ
Rhizophoreæ
Lythrarieæ
Melastomaceæ
Cucurbitaceæ
Portulaceæ
Grossulareæ
Saxifrageæ
Caprifoliaceæ
Valerianeæ
Dipsaceæ

Gesneriaceæ
Vaccinieæ
Ericeæ
Styraceæ
Oleineæ
Jasmineæ
Asclepiadeæ
Begoniaceæ
Labiatæ
Acanthaceæ
Solanaceæ!
Scrophularineæ
Primuleæ
Plumbagineæ
Plantagineæ!
Nyctagineæ
Amarantaceæ
Santalaceæ
Proteaceæ
Urticaceæ?
Casuarineæ
Cupuliferæ

Piperaceæ
Myristicaceæ
Magnoliaceæ
Olinieæ
Escallonieæ
Philadelpheæ
Rhizophoreæ
Onagrariæ
Haloragineæ
Droseraceæ
Portulaceæ
Tamaricineæ
Salicineæ
Orchideæ
Connaraceæ
Gramineæ?

The Flora is yet the deficient in Cryptogamia, and of the Fungi; and also of the Urticaceæ, in which both families it differs widely from the Polynesian islands and tropical countries in general.

Obs. — It will be observed that New Zealand is a most inconvenient region for Botanical pursuits, possessing many of the disadvantages of the Tropics, without the compensating causes, in many instances of previous habits of generalization, to which we are indebted for the annual revival of botany in more favoured climates. Indeed the annual revival of botany is very striking, compared in instance with such a region as Brazil. The Veronica (Hebe) salicifolia was almost the only plant in flower [illegible]

[illegible]

when the Leptospermum is more fully in bloom, and the scarlet spr[illegible]
Metrosideros, the Landscape must be much more lively.

Annuals, it may well be supposed are rare, and [illegible]

We thought we discovered a land [illegible]
have brought from the coast to town many botanists, a geologist &c
themselves more ready. - though the powers of Capt. H. would have
more scope in this island. Accordingly a minute was left, H. J. H. Hook,
Revd J. Knowles, & their house negotiated, as on H. Channel & which they
were originally adopted.

[illegible] to the three distinct regions in New Zealand, as
is probably the case in South East Australia. 1. The Northern, say to about
Lat 38°, and to the Bay of Islands [illegible] H.
Kauri Pine it is said is not found south of Lat 37° 2. the
Southern, including the remaining portion of the District and the middle
region of the Province. We may mention at present as Antipodean here,
the Gentians, Ranunculi, some Crucifers (Nasturtium), Veronicas, Andromeda
rupestris, Pratia angulata, Pimelea prostrata, Drosera rubiginosa, Myosotis
alpina Forster, Aster? holosericeus, Brachyglottis rotundifolia, Panax? simplex,
Primula vulgaris, Acaena [illegible], Solanum? arborescens, Myrsine variabilis;
Carex rigida; Danthonia [illegible], some Orchideæ & Compositæ, also
some Umbelliferæ, Ranunculus* [illegible], Crassula? [illegible] Metrosideros
four different species; Leptospermum, two species; Gunnera? [illegible] Myrsine.
different from H. scottica sp. [illegible]

N.B. — 3. The alpine region

Cultivation & introduced products. [illegible] I was asked that they
were introduced apparently tried almost entirely, as [illegible] (as it
perhaps [illegible] which, as the result of the "Erebus"
[illegible] exposed by a
[illegible] proves the more humid Antipodean, Coast of Victoria &c.) being distinct
from any important vacuum adopted for cultivation. We have mentioned the most
obvious tradition of the introduction of the Aurea Potato. - The Aurea

(a delicious vegetable) was also introduced by Mr. Nasmith of the establishment — it was extinct, is not a native. — But to return to the Potato, first mentioned by Cook in his first voyage (the first instance that it is known of being introduced here). "saw Sweet Potatoes, Coccos or Edulus (qu. Taro?) and some Gourds". The Common Potato was introduced by Europeans & all the other vegetables that are now cultivated have been brought here by them.

The Agricultural capacity of New Zealand must be very great indeed, enough to support a numerous population of fertile soil. — The Potatoes & Indian corn are perhaps the only vegetables that can be said to be known to the Natives, & it is certain that for both these the soil is admirably adapted. Of both these we were told a good crop. Peaches are abundant, but of inferior quality. Apples, Pears, Plumbs & Apricots, said to be cultivated here, we did not meet with. Grapes are here in season, but poor in quality; some vines we met with that have been transplanted, but we fear there is too little sun. The Sweet Potato ("Kumera") is already cultivated by the natives, but in small quantity, inferior to our own; generally it is said they do not yet know how to cultivate it, but now a larger one. Taro seemed extremely rare, and we did not see a specimen of the root during our stay. — What I have called pease seem, by some, to have been considered a failure, the grains not being well filled. Cabbages & Turnips are now naturalized, but the latter grow was apt to become coriaceous. The general complaint was that insects & birds destroyed it; and the latter have divided it seems between them & the Cabbage, by eating it from slips! — Gourds were pretty abundant, & sometimes Water Melons, but little attended to; Pumpkins or Pumpkins did better. Onions were rare and dear, & good for little. We were surprised at not seeing Cucumbers or Gherkins in the gardens, but were referred to the frequency of the "Cape Gooseberry" (Physalis) which it is true is rather agreeable in its flavour. The allegation to be settled at Wanganui, we were assured by Mr. Williams, Junr, had been a false one. The other vegetables observed by us were

The Potatoe also bid fair to

be

New Zealand.

New Zealand.

I will [illegible] that [illegible] I [illegible] to [illegible] [illegible] [illegible]

New Zealand.

New Zealand.

M. spa . . . . . Hook. f. exsist. Fl. N. Z. p. 3; Handb. New Zeal. Fl. p. 2 & 11. [illegible]

Pratiola? . . . . . [illegible]

Gratiola? . . . . . [illegible]

Lindernia . . . . . [illegible]

Limosella . . . . . [illegible]

Veronica . . . . . [illegible]

Hebe salicifolia . . . . . [illegible]

Myoporum . . . . . [illegible]

Solanum aviculare . . . . . [illegible]

Nicotiana . . . . . [illegible]

Mimulus . . . . . [illegible]

Mimulus [illegible] . . . . . [illegible]

Utricularia . . . . . [illegible]

New Zealand.

New Zealand.

Metrosideros . . . .

Leptospermum . . . . .

Pomaderris . . . . .

Discaria [Colletia] . . . .

Melicytus [Hymenanthera] . . . .

Coprosma* . . . .

Corokia . . . .

[Acianthus?] . . . .

Pimelea . . . .

Daphne . . . .

Drosera rotundifolia, L.
" australis, H.
" spiralis

Hypogonum scandens . . . .

Peperomia . . . .

Pterostemma . . . .

Piper excelsum . . . .

Anthoxanthum odoratum, L.? . . . .

Allium . . . .

Typha* . . . .

Sparganium* . . . .

Freycinetia* banksii . . . .

Luzula* . . . .

Juncus* . . . .

Leptocarpus . . . .

Cyperus ustulatus, Hk.f. . . . .

Schoenus . . . .
"
"
"

Arund. madritis .
Melaris canariensis
Agrostis?

Agrostis fatua

Festuca .

Cynosurus
Eragrostis

Phleum .
Alopecurus

Apera spica venti .

Stipa pennata .

Bromus arvensis
mollis

Bromus asper
sterilis
tectorum

Triticum .

Lolium perenne
temulentum

Hordeum

New Zealand.

New Zealand.

Polytrichum.

Sphagnum.

Jungermannia

Dicranum

Orthotrichum

Trichostomum

Hedwigia.

New Zealand.

[illegible] at [illegible]

Algæ.

New Zealand [illegible] all [illegible] that we had [illegible] are chiefly found, and not over the Coast itself. Here collected [illegible] Bay, Tapuna and the mouth of the Waipara river.

Fucus sinuosus Hooker was by far the most abundant [illegible] did not find it by no means so completely covering the rocks [illegible] and the [illegible] compressed with [illegible] and beautiful [illegible] were cast ashore, and then a Journal [illegible]

The Fucus [illegible] contrary to all [illegible] in their situation, and were found [illegible] upper part of the Bay — the [illegible] first sight [illegible] considerable resemblance to a bunch [illegible] were unable to distinguish [illegible] and appearance; the joints especially in those growing near the [illegible] solid, [illegible]

There was no lack of Confervæ in the fresh waters, but [illegible] point to them as [illegible] productions.

[illegible]

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Mammalia.

[illegible]

New Zealand.

Psalm . . . . .

Psalm . . . . .

Psalm . . . . .

Matthew . . . . .

Matthew . . . . .

Matthew . . . . .

New Zealand.

Melithreptes . . . . . M. Shaw, ex Latham. Described by [illegible] as very scarce (Voy. Adventure & B.), as "black, tipped with white, that are slightly curved. Head [illegible] Feeds on insects. Is seldom in day time met with in the woods, and is then [illegible]

Nestor . . . . . not different from the South Island species. Many Parrots shot in a wood at the bay of Islands by one [illegible] and [illegible] "and must there, — and that there are usually two males and a female to the flock."

Psittacus . . . . . "Parrakeet, rather smaller than a red species, [illegible] the hand", used sparingly for food by the natives.

Psittacus . . . . . "Small species of Parrakeet shot at Waitemata by young M. de Thierry.

Cuculus . . . . . With a whitish collar — Note. Referring to the received opinion respecting this genus, which ranked new Zealand, together with Samoa and Tahiti upon the Australian Cuckoo has not, it is said by the natives of a Hinapiko. There is not one that does visit this island. It frequents bush along the banks of the bay of Islands, and is met with in many other situations. It is generally silent but has a little whistling cry.

Columba . . . . . "A fine species, very large, a good deal of the white marking on the breast. It is called "Kukupa" by the natives, and by the Settlers has been converted into "Cockatoo"! — Its flesh is the only white meat that can be got, being fed upon the berries of the Karaka tree, which grow in great profusion throughout the Islands, and which are poisonous to all other animals except the Kukupa.

New Zealand.

Aptenodytes antarctica . . . This rare and remarkable bird [illegible] found in the Antarctic Ocean; it is [illegible] at Kerguelen's Land, but is not known to frequent the coast of New Zealand: Mr. Gould [illegible] that it occurs there in the Summer season, when it [illegible] is nocturnal in its habits. — Other [illegible] the Writer before alluded to [illegible] South [illegible]. [illegible] [illegible] [illegible] that situation. It will hereafter, no doubt,

Eudyptes . . . [illegible] adult specimen [illegible] Auckland, [illegible] Mr. Gould [illegible] Mr. [illegible] to the Genus.

Ardea nov. . . . [illegible] Mr. Gould [illegible] Mr. [illegible] Mr. [illegible] Mr.

New Zealand.

Heron . . . . . Light grey above, white beneath. [illegible] bill yellow; hind neck white; a white spot above and behind the eye. Obtained by H. Cuming on the [illegible] of New Zealand, "nearest the latter" (Lyall).

Larus marinus? . . . . Appeared to be this species. The [illegible] and could be determined from specimens in the [illegible].

Larus . . . . [illegible] bill red at the base; [illegible] spot on each side, at the tip of the upper mandible.

Ephemydura . . . . Has a bluish spot above the eye. [illegible]

Anas . . . . Uniform dusky; bill black. Has a yellow spot in front; feet black. [illegible]

Anas . . . . . White, with black primaries. [illegible] on the upper part of the bill. [illegible]

Anas . . . . Large. Brown [illegible]. [illegible] legs about the bases of the feathers, and [illegible] when the bill is up. [illegible] On the road to Waiwakaiti (about half way) [illegible] was said to have a nest in the vicinity.

[illegible]

[illegible] and [illegible] [illegible] [illegible]

"to prejudice under". From the English [illegible] animal, which is altogether at variance with the English bill.

Gochet? . . . . A good deal was said at the last meeting in the Woods, there was [illegible] in the dark. This patient is [illegible] of the Gochet tribe, but we can hardly say as it belongs to the expected result not being able to procure this animal [illegible] -ded to future visitors.

Fishes.

The Ichthyology of New Zealand [illegible] insulated and situated in the high latitudes of the Southern Hemisphere, [illegible] fishes, which are so imperfectly known. We were however favourably situated for procuring specimens of the [illegible] at first sight presenting to the observer a little variation could be [illegible] Pomacentridae on the other hand, could not be distinguished [illegible] respecting the prevalence of species. - Amongst the following [illegible] -cantheidae, Holocentridae, Trachinidae, Mullidae, Cottidae, Sciaenidae, [illegible] -cubidae, Atherinidae, Chaetodontidae, Pomacentridae, Labridae, Scorpididae, Sphyraenidae, Cepolidae, Sciaenidae, Clupeidae, Engraulidae, Salmonidae, Gymnotidae, Pediculati, Gobiidae, Blennidae, Gymnodontidae & Balistidae, Muraenidae and Echinorhinidae.

[illegible] and Myxobranchidae. The Species [illegible] of the Northern Hemisphere, [illegible] found in Amongst the Pacific [illegible] on the North coasts of America as at the Sandwich Islands [illegible]

[illegible] The Gadidæ were generally in this Hemisphere.

As to the Arctic species, they are of course all [illegible]

[illegible] found in the lower parts of the Strata. Whether the [illegible] present means of determining. — It may be well to note again the absence of the Salmonidæ & Cyprinidæ. — It should be observed that we [illegible] any fresh-water Stream. I particularly regret not having had [illegible]

New Guinea.

Dicæum papillosum . . . "Sum-sum" [illegible]
the bill yellow, the base, and [illegible]
[illegible]

Pogonias . . . "Sum-si" of the Sydney species [illegible]
[illegible] on the back, and [illegible]
singing birds.

Ptilotis chrysura . . . Wood, Cape York [illegible]

Myzomela . . . "Nanni" of Ophirans — [illegible]
Head and [illegible] plumage is jet black, [illegible]
remarkable patch of the [illegible] and breast is Vermilion [illegible]
scarlet in parrots of the [illegible] — [illegible]
ainuna of this size" are usually caught in the [illegible]
ground". — The bill is [illegible], and tinged with yellow. Young [illegible]
beautifully mottled on the back, when first taken out of the [illegible]

Carano . . . . . "A-nana". Taken with the bird in the act of [illegible]
Eaten by the Natives. Same in the weight of three [illegible]

n. g.? Acanthiza . . . . . 1½ Inch; elongated; blackish-brown; [illegible]
the tail in the Rump. — The first primary [illegible]
not much Compressed: of Australian genus?

Hirundo . . . . . A small black species, with the throat white [illegible]

New Zealand.

[illegible] more [illegible] [illegible] [illegible]

New Zealand.

[illegible]

Crane. Acid golden. 2½ ft. long. Dorsal commencing not far behind pectoral.

[illegible]

Mullet . . . . . 3 ft. White flesh . . Abound in the bay of Islands &c. &c.

[illegible]

Perch.

[illegible]

[illegible]

[illegible]

laws of Bengal shall be held [illegible] the same
attacks, and Hindu [illegible] the like tribunals, to which they
shall be subject against the Hindu, the adoption of the regu-
lation. This also provides that, in suits between parties
professing, may be conducted according to the [illegible]
to the decision of the Legislature, under the superintendence
with the Hindu or Mahomedan, and the parties shall
certain whether appeals should be heard before the
Sir Ranald Martin? — the question would depend upon
according to the law of the court sending them, or to that
how the case should be tried. [illegible] would probably
made and regulations of the same, subject with the consent of
or respective [illegible] and [illegible] appeal [illegible]
it, or a binding power; a matter, perhaps, not

Upon all the [illegible] that it [illegible]
have been a [illegible] and [illegible]
to send the [illegible] of the year [illegible]. With [illegible]
in the Imperial [illegible] of the Court, [illegible]
under your hand, whether it be [illegible]
[illegible] or, to use the expression, [illegible]
and determine it [illegible] under [illegible]
the rule of Bengal [illegible], which [illegible]
these heads.

Recognized [illegible]

Exception [illegible]

Future [illegible] appeal [illegible]

Unexplored [illegible]

Jubbul

Neue Vocabeln.

Epsia . . . . . Lapis Calaminaris . Mit. expl. . . .

Ethaqualte . . . . . Alaun Eisig

Ethyl . . . . .

Ethmedium . . . . . .

Aramed . . . . . Lang. (Amidtäure)

Ara . . . . . Acid
. . . . . Ac.

Acazid . . . . . Acid

Ardicata . . . . . Lang.

Vicindsto . . . . . Salzsäure C. . . .

Arsbiumsaid . . . . Arsenik.

Colgnbäer:

Elaton . . . . . Eisen

Ethylchlorid . . . .

Mister . . . . . Salpetersäure

Dremthid . . . . . Schwefelkohlenstoff . Schwefelsäure

Ethylschwefelsäure . . . . Schwefelsäure.

Ethylsäure . . . . . Essigsäure

Methylalkohol . . . . Holzgeist . Methylalkohol

Methan . . . . . Sumpfgas.

Methylamid . . . . . Ammoniak

Aster? . . . . . Mt. [illegible]

Stenocarpus . . . . . [illegible]

Callidium . . . . . [illegible]

Agapanthia . . . . . [illegible]

Cerambyx . . . . . [illegible]

Cure . . . . . [illegible]

Cure . . . . . [illegible]

Cure . . . . . [illegible]

Vendura . . . . . [illegible]

Vertidia . . . . . [illegible]

Leccinus . . . . . [illegible]

Stefieni . . . . . [illegible]

Stolella . . . . . [illegible]

Spatium . . . . . [illegible]

Spatium . . . . . [illegible]

Scarab. . . . . [illegible]

Stolella . . . . . [illegible]

gen. act. . . . . [illegible]

New Zealand.

New Zealand.

Hyalea . . . large: [illegible]

Hyalea . . . [illegible]

Pneumodermon . . .

[illegible]

Hyale? . . . [illegible]

Hyalopsis? . . .

Glaucus . . .

Glaucus . . .

Atlanta . . . [illegible]

Carinaria . . . [illegible]

Firola . . . [illegible]

[illegible]

[illegible]

Crustacea.

[illegible] Geographical [illegible]; [illegible] [illegible] [illegible]

Ord Register öfver Materier i denna Bok. Hvilken Ord Register
skolat upsökas, uti hvilken Capitel, det är Del som ämnet
är. — Af hvilken anledning Läsaren bör
uti Begynnelsen af hvarje Capitel, innan han begynner läsa det
sig noga bekanta med Capitlets Innehåll.

Abortus . . . . . Se mera uti Cap. 2 Del 3.

Abscess . . . . . Se mera uti Cap. 2 Del 3.

Vaginalis . . . . . Se mera uti Cap. 2 Del 3.

Actio . . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.

Adamsapple . . . . . Se mera uti Cap. 2 Del 3.

Adhæsion . . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.

Adjectiva . . . . . Se mera uti Cap. 2 Del 3.

Adjectus . . . . . Se mera uti Cap. 2 Del 3.

Adstringentia . . . . . Se mera uti Cap. 2 Del 3.

Affectus . . . . . Se mera uti Cap. 2 Del 3.

Affinis . . . . . Se mera uti Cap. 2 Del 3.

Agens . . . . . Se mera uti Cap. 2 Del 3.

Agglutinatio . . . . . Se mera uti Cap. 2 Del 3.

Albumen . . . . . Se mera uti Cap. 2 Del 3.

Alcali . . . . . Se mera uti Cap. 2 Del 3.

Alcohol . . . . . Se mera uti Cap. 2 Del 3.

Alimentum . . . . . Se mera uti Cap. 2 Del 3.

Allantois . . . . . Se mera uti Cap. 2 Del 3.

Alvus . . . . . Se mera uti Cap. 2 Del 3.

Amaurosis . . . . . Se mera uti Cap. 2 Del 3.

Amnion . . . . . Se mera uti Cap. 2 Del 3.

Amputatio . . . . . Se mera uti Cap. 2 Del 3.

Anastomosis . . . . . Se mera uti Cap. 2 Del 3.

Anatomia . . . . . Se mera uti Cap. 2 Del 3.
. . . . . Se mera uti Cap. 2 Del 3.

Anchylosis . . . . . Se mera uti Cap. 2 Del 3.

San Carlos

Volcanoes

Trees

Coal at S. ...

Guaymas

... Mexican ...

... Hermosillo ...

... Mexican ...

... Indians ...

... Mexican ...

... Indians ...

... Mexican ...

... Indians

Auckland Islands.

[illegible]

Flora.

[illegible]

Auckland Islands.

Vegetation.

Auckland islands.

Auckland Islands.

Antarctic Continent

. . . . . is cited at conclusion of the expedition to the Pacific Ocean, 1838-42, & very respecting the Natural History of those regions is derived from the Officers and the Specimens brought back — The other parts also must rely to the journals of the Commander and Officers.

The Specimens of Rock obtained from the icebergs, were of two kinds — *Granitic*; and a very *Compact Sandstone*, with the grains so closely united as to be indistinguishable — yet it would be called a 'Greywacke' by some. There was nothing igneous or Volcanic in their appearance, and it was presumed that they could not have come from any Ocean Islands, but from a large extent of land, a Continent, like Australia.

From the various accounts it appeared that there has no regularity — that time at last a boundary to the limit of explorations would be found in perpetual ice and Snow. The slight change of Ocean in the southern Hemisphere was also to favour this idea, — for a current being found to set towards the South for the Summer months of the Pacific Region. —

Macrocystis . . . . . was found floating in S. Lat. 55°05 — (W. Long.)

Zoology.

A species of Star-fish picked from the rock, exposed amidst the ice, was in fact the only production actually obtained from the land. But the Seals & Penguins seen in the vicinity, must be regarded as belonging to it. The other birds and Animals noted below, are seen generally Pelagic. –

Seals. – . . . . . A "Sea-lion" was attacked on the ice, but managed to make his escape

Whales . . . . . were also seen – quite up to the ice. –

Aptenodytes . . . . . Most of upper parts black; throat, neck, & breast pearl grey, white. Bill long. Legs. Feet long & strong; toes webbed; claws black. – 75° 46' (Oct. 4th)

Procellaria Capensis . . . Apparently common as before, but the birds seen keep – 64° (Oct. 4th)

Procellaria - - - - - of gigantean size, & the same colour. – All brown; the legs & bill white. Seen down to 64° 40' but not S. of 67° 15' –

Penguins . . . . . from white-breasted Black Bill and Legs. Colour as before. 64° 44'

Antarctic Continent.

Thalassidroma Wilsonii. — Apparently the same with the Cape Horn & North atlantic species. — S. Lat. 60° 10', and another specimen in 67° 15'. —

Diomedea exulans . . . . Apparently the same with the Cape Horn species. Tail black tipt. — S. Lat. 64° 07'. — Mr Knox informs me that in both his cruises "the Albatrosses were not found at the highest Southern Latitudes". —

Mysis - like . . . . Congener of Cape Verd species. — Numbers "at Sea in high S. Lat. . . . . " — properly Pelagian. —

Anatifa . . . . . attached to Macrocystis, in S. Lat. 55° 05'. — properly pelagian.

Limacina? . . . . . Nautiloid shell fig. by Capt. Wilkes. — High S. Lat. . . . properly pelagian. —

Eurycle? . . . . . Arms divided at extremity. From exposed rock among ice, attached to the Land. (Mr. Dyes)

Physalia . . . . . High S. Lat . . . . (Mr. Dyes.)